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LOCAL PUBLIC WORKS PROGRAM

FINAL REPORT

U.S. DEPARTMENT OF COMMERCE • Economic Development Administration

LOCAL PUBLIC WORKS PROGRAM

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Creating Jobs Through Public Works Projects in Areas of High Unemployment

U.S. DEPARTMENT OF COMMERCE
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for Economic Development

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FOREWORD

This report and the supporting evaluation studies present the major results of the $6 billion Local Public Works Program (LPW) which the Economic Development Administration (EDA) implemented in 1977. The program had two phases: LPW I at $2 billion was initiated by Congress in the closing days of the Ford Administration, and LPW II at $4 billion was a keystone in the economic stimulus program initiated by President Carter at the onset of his Administration.

Given the magnitude of the funds and the policy issues involved in the use of public works as a tool for stimulating the economy, it was incumbent upon EDA to carry out a thorough evaluation of the program and publicly report its findings. This document (Report A) summarizes those findings, which are presented in detail in the following evaluations conducted by EDA staff or outside researchers working for the Department of Commerce:

- Analysis of Construction Employment Generation by Project Types in the Local Public Works Program (Report B)

- Report on the Characteristics of LPW Employees (Report C)

- On-Site Data Collection and Analysis in Support of a Microeconomic Evaluation of the Local Public Works Program (Report D)

- The Timing of the Construction Employment Impacts of the LPW Program Relative to Local Area Employment Cycles (Report E)

- The Net Cost of the Local Public Works Program (Report F)

- Evaluation of the National Impacts of the Local Public Works Program (Report G)

Our purpose in this document is to report on our stewardship of significant public resources and to provide guidance to future policy makers.

LPW, the largest countercyclical public works program undertaken since the depression, had three basic objectives:

- providing a stimulus to the national economy and distressed local economies;

- generating employment opportunities in construction and related industries; and

- constructing or renovating needed public facilities.

As this report documents, the program was largely successful in meeting these objectives, as well as several secondary goals. In addition, the LPW experience revealed valuable insights about a more effective structure for both an accelerated public works program like LPW and a countercyclical public works program like that advocated by the House in 1979 and 1980 as part of the expansion and extension of EDA's legislation. I will use this "Foreword" as a forum for discussing these insights, as well as outstanding issues, in the context of examining the utility of public works as a countercyclical tool, a subject that has been hotly debated for more than a decade.

At the outset, it is important to note that much of the criticism of public works as a countercyclical instrument stemming from the LPW Program is misdirected in that it was based on LPW's failure to meet objectives that were not set forth for the program. LPW, particularly LPW II which I helped design and had responsibility for administering, was not directed at soaking up large numbers of the long-term unemployed, nor was it conceived as a skill training mechanism. Moreover, since both rounds of the program were initiated long after the trough of the recession, they clearly could not perform as countercyclical measures in the classic sense.

One of the factors that is often overlooked in discussing this subject is that public works is not the only instrument in the panoply of economic or employment stimulus tools. Tax cuts, public service employment, expansion of training programs, extended unemployment insurance, and fiscal assistance aid are among the other measures which are or could be brought to bear when such micro-economic policies are called for.

There are, however, some "open" issues which need to be addressed in the use of public works as a countercyclical tool. First and foremost is the utility of traditional economic stimulus programs in the changed economic circumstances characterized as "stagflation." Certainly the advent of persistent inflationary pressures simultaneous with declining or lagging economic growth and employment must now be considered in determining the appropriateness of public works as a countercyclical effort.

In addition, there have been three historically persistent problems in using public works as a countercyclical tool, each of which is related to the difficulty in obtaining the anticipated impact within the desired timeframe. One involves the ability of Federal, State, and local governments to propose, review and initiate construction on useful public works projects within a short period of time. Under the LPW Program, it was demonstrated that this can be accomplished. A second relates to the length of time required to complete projects. Again, the LPW experience revealed that there are certain types of projects that are completed more rapidly, such as repair and renovation projects involving less than $500,000.

A third problem relates to the timing of program initiation. Too often in the past, the programs have begun so late that the major effects are produced after the economy has turned around or at least is well on its way to recovering. Indeed, some of the impact of such programs may well have exacerbated inflationary pressures which are latent in a strong economic growth period. LPW II, for example, may well have had such an effect given the enactment and implementation of the program so many months after the 1975 recessionary trough. To counteract such lags, proposals for "automatic trigger" devices for standby public works program have been made. The translation of this concept into an appropriate legislative and administrative mechanism, however, is fraught with difficulties. No single or group of "trigger" measurement devices can address the myriad economic considerations (e.g., inflationary factors and size of the budget deficit) that must be assessed in determining the efficacy of mounting a countercyclical public works program. Thus, even a mechanism that accurately predicts a recession before it ensues, cannot be used in isolation to trigger such a program.

The objectives of a countercyclical public works program might also be reexamined. Goals other than the traditional ones of generating a timely stimulus, creating short-term employment and providing useful facilities can be identified. For example, more labor intensive projects with greater impact on the general unemployed and long-term unemployed might be sought. More timely completion of projects might also be pursued to maximize the stimulus effort and reduce any procyclical effect. In addition, more return on the expenditures for public infrastructure might be achieved if greater emphasis were given to the rehabilitation of deteriorating public infrastructure, thereby assisting communities by bringing that infrastructure to "like new" condition and delaying full capital replacement costs.

Another set of policy issues involve the multiplicity of subobjectives which may be appended to a countercyclical public works program, such as minority business involvement, the use of American-made materials, employment for veterans, etc. All of these are desirable and legitimate public policy objectives, but the administrative implications for a rapid implementation effort are substantial, and should be carefully weighed before such requirements are added.

As a result of my experience with LPW and other stimulus programs, I believe it would behoove the framers of any possible future countercyclical public works program to explore the possibilities of increasing the program's impact on the long-term unemployed and the rehabilitation needs of deteriorating public infrastructure. Indeed, a labor intensive public works program primarily directed at the rehabilitation and weatherization of existing public facilities which had hiring linkages with the long-term unemployed could be considered not only as a countercyclical device, but as an ongoing, regular program. Organized training could be structured as part of the program, and the work would largely be performed through competitive bids by contractors. Only a portion of each contractor's workforce would have to be drawn from the long-term unemployed, and they would be paid a training wage. As a result of these features, such a program would continue the objectives of upgrading infrastructure and providing meaningful private sector employment experiences for the long-term unemployed. These as well as other characteristics give it obvious advantages over the Public Service Employment Program.

In closing, I would be remiss not to cite the unparalled public administration effort involved in the implementation of the LPW Program -- an effort not explicitly documented in this report and the supporting evaluation studies. Special recognition must go to the hundreds of dedicated men and women who worked long hours and weeks in processing and managing over 10,000 public works projects. Since public praise for the civil servant is scarce, the achievements of the LPW staff have not received the attention warranted by the resulting benefits to so many communities and individuals throughout the country. To each of them, I extend my own deep appreciation and a "well done."

Robert T. Hall
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for Economic Development

TABLE OF CONTENTS

Page

FOREWORD

SUMMARY i

I. PROGRAM DESIGN 1
  A. LPW I. 1
    1. Legislative History 1
    2. Program Implementation. 2
  B. LPW II 4
    1. Legislative History 4
    2. Program Implementation. 6

II. PROGRAM ADMINISTRATION. 10
  A. Pre-approval Monitoring. 10
  B. Post-approval Monitoring 11
  C. Financial Management 12
    1. Cost Accounting 12
    2. Disbursements 12
    3. Audits. 12
  D. Construction Management and Progress 13
    1. Construction Starts 13
    2. Project Completions 14

III. PROGRAM ACCOMPLISHMENTS. 15
  A. Introduction 15
  B. Economic Stimulus. 17
    1. Substitution and Addition of Funds. 18
    2. Program Timing. 19
    3. Local Fiscal Relief 22
    4. Inflationary Impacts. 26
  C. Employment 26
    1. Employment Generation 27
    2. Factors Influencing Project Cost Effectiveness and Build-Up Rates. 39
    3. Employee Characteristics. 42
    4. Net Cost. 49
  D. Infrastructure 50
    1. Description of Projects Funded. 52
    2. Types of Grantees 58
    3. Long Term Impact. 61
  E. MBE and Other Special Impacts. 62
    1. Background. 63
    2. Enforcement Procedures. 63
    3. Assistance to Minority Firms. 66
    4. Current Status. 67
    5. Impact of the MBE Requirement on Firms and Grantees 70
  F. Detailed Individual LPW Reports. 71

IV. APPENDICES. A-1
Appendix A: LPW Employment Build-Up Patterns. A-1
Appendix B: Maps of LPW Project Counts and Funding Levels B-1
Appendix C: LPW Evaluation Studies Conducted by or for the Department of Commerce. C-1
. Appendix D: Other LPW Evaluation Studies. D-1

LIST OF ILLUSTRATIONS

		Page
Table 1	LPW I Chronology of Events	3
Table 2	LPW II Chronology of Events	9
Table 3	LPW Disbursements	20
Figure 1	LPW I and II Disbursement Pattern	21
Figure 2	Comparison of Employment and Disbursement Patterns -- LPW I	23
Figure 3	Comparison of Employment and Disbursement Patterns -- LPW II	24
Figure 4	Comparison of Employment and Disbursement Patterns -- LPW I and II	25
Table 4	LPW Total Employment and Cost Per Job	29
Table 5	LPW On-Site Employment by Skill Levels	31
Table 6	Total LPW Wage Payments and Average Earnings by Worker Category	33
Table 7	Percentages of Round I and Round II Workers and Person-Months by Occupation	34
Figure 5	LPW On-Site Employment by Round	36
Table 8	Monthly LPW Construction Employment	37
Figure 6	Build-Up and Cost-Effectiveness by Project Type and Round	40
Table 9	Comparison of LPW Employees with Construction Labor Force	43
Table 10	Comparison of LPW Labor Force Occupations with Construction Labor Force Occupations	45
Table 11	Net Cost of the LPW Program	51
Table 12	LPW Funding by Project Function	53
Table 13	Types of LPW Projects	55
Figure 7	LPW Project Cost by Size and Round	56
Figure 8	Composition of Average LPW Project Dollar	57
Table 14	Types of LPW Construction Activity	59
Table 15	LPW Funding by Type of Grantee	60
Table 16	Distribution of LPW Contracts by Minority Groups	69
Table 17	Comparison of New Firms by Majority and Minority Ownership	72
Appendix A	LPW Employment Build-Up Patterns	A-1
Appendix B	Maps of LPW Project Counts and Funding Levels	B-1

SUMMARY

A. BACKGROUND

The Local Public Works (LPW) Program implemented by the Economic Development Administration (EDA) during FY 1977 was divided into two distinct segments: a $2 billion Round I program (LPW I); and a $4 billion Round II program (LPW II). LPW I (the Local Public Works Capital Development and Investment Act of 1976) was a Congressional initiative enacted in July of 1976 over President Ford's veto and funded in October 1976. LPW II (the Public Works Employment Act of 1977) was proposed by President Carter in January 1977 as part of a comprehensive economic stimulus package, and was enacted and funded in mid-May 1977.

Both Rounds provided grants for State and local government public works projects for the interrelated purposes of:

- stimulating the national economy and distressed local economies through the infusion of Federal public works funds;
- generating employment opportunities, particularly in construction trades and related industries and services; and
- constructing or rehabilitating useful public facilities.

Both Rounds also contained the unprecedented statutory requirements that a decision be made on each project with 60 days of its submission and that construction on each project begin within 90 days of its approval.

Under LPW I, 2,062 projects representing $2 billion were funded on the basis of a seven-factor formula that scored approximately 25,000 applications totalling more than $24 billion. LPW I applications were submitted between late October and early December 1976, and projects were approved between late December 1976 and early February 1977.

In recommending a $4 billion LPW II Program, President Carter stressed the need for an improved project selection process that would target funding to areas of highest unemployment in each State, emphasize local priorities, reduce LPW I's funding inequities among different areas and types of governmental units, and increase the program's efficiency by limiting project submissions to those that applicants knew in advance could be funded. By working closely with Congress during the spring of 1977, EDA officials succeeded in having the LPW II legislative history reflect this improved project selection process, which consisted of methods for:

- allocating funds (planning targets) to eligible areas and types of governments; and
- selecting projects to be funded within those planning targets.

Fund allocation was accomplished on the basis of area unemployment statistics and participation of various types of government under LPW I, while project selection within certain basic guidelines was determined by State and local officials in accordance with their own priorities.

Using this approach, EDA provided LPW II planning targets to thousands of State and local governments and Indian tribes during June and July of 1977. Eligible applicants, including school districts, prioritized projects within these targets and either resubmitted LPW I applications or submitted new projects. Between July 21 and September 30, 1977, EDA approved 8,554 LPW II grants totalling $4 billion, of which 4,086 projects representing $1.8 billion were approved during the last two weeks of the fiscal year.

In January of 1978, EDA published a Status Report on the LPW Program that provided detailed information on the evolution and implementation of both rounds, as well as available data on program impacts. This was followed in September of 1978 by the publication of an Interim Report on the LPW II 10 percent minority business enterprise (MBE) requirement, an unprecedented provision which stipulated that 10 percent of every LPW II grant be expended with one or more minority firms. Both documents, as well as periodic testimony by EDA officials, indicated that the comprehensive evaluation of LPW being conducted by Commerce staff and private firms would be the primary source of final information on the results of LPW I and LPW II.

This Final Status Report summarizes the results of that comprehensive evaluation, the various components of which are listed in Appendix C and are available under separate cover from EDA. It also presents information on a variety of different aspects of the LPW Program such as the status of project audits and disbursements, and updated data on minority business participation in LPW project construction. Because this report is intended to serve as a comprehensive summary document, it repeats some of the information presented in previous publications.

B. AREA AND APPLICANT CHARACTERISTICS

Both the LPW I and LPW II statutes emphasized assistance to areas with unemployment rates above the national average* and stipulated that States, territories, cities, counties, towns, parishes, Indian tribes, and other political subdivisions were eligible for funding. Moreover, as indicated in the preceding section, two of the guiding principles in LPW II were to target funds to areas of greatest distress and to distribute funds equitably among different types of governments and types of areas. The following data compare the respective performances of LPW I and LPW II in providing funds to areas of high unemployment and in distributing funds among eligible State and local governments and urban and rural communities. Given the explicit priority assigned to ensuring greater targetting and equity in LPW II, its superiority in the various categories is not surprising.

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* The LPW I statute, however, required that 30 percent of the funds be used to finance projects from areas with unemployment rates below the national average.

- Percentage of project funding in areas with unemployment rates above the national average
  - 63.4 percent under LPW I
  - 72.0 percent under LPW II
- Average unemployment rate for areas receiving funds
  - 8.9 percent under LPW I
  - 9.4 percent under LPW II
- Percentage of project funding in areas with unemployment rates of 9 percent or more
  - 46.2 percent under LPW I
  - 54.1 percent under LPW II
- Percentage of project funding in areas with less than 6.5 percent unemployment
  - 23.3 percent under LPW I
  - 13.8 percent under LPW II
- Percentage of funds to cities of more than 50,000 population, which had 45.9 percent of the Nation's unemployed between March 1976 and February 1977
  - 38.4 percent under LPW I
  - 47.1 percent under LPW II
- Participation by 100 largest cities
  - 65 percent under LPW I
  - 93 percent under LPW II (The remaining cities had received a disproportionate share of the LPW funds in LPW II and therefore did not receive any LPW II funds.)

- Number of communities under 5,000 population receiving funds
    - 570 under LPW I
    - 1,580 under LPW II
- Number of communities under 2,500 population receiving funds
    - 385 under LPW I
    - 1,000 under LPW II
- Number of State governments receiving projects
    - 15 under LPW I
    - 50 under LPW II
- Number of county governments receiving projects
    - 190 under LPW I
    - 901 under LPW II (another 78 used their planning targets to fund other applicants' projects)

LPW II's improved performance in directing a greater proportion of the funds to areas with higher unemployment rates is more noteworthy because unemployment had declined somewhat between the LPW I and II periods.

C. ECONOMIC STIMULUS

One of the three major objectives of the LPW Program was to stimulate the national economy and distressed local economies through the infusion of public works funds. As reflected in the previous section, both rounds and particularly LPW II targetted funds to distressed local areas. To determine LPW's net stimulus to the economies of such areas as well as to the national economy requires consideration of such key factors as:

- the extent to which activities generated by LPW would have taken place within the same time period in the absence of LPW;
- the extent to which LPW funding stimulated other spending that would not have taken place within the same time period in the absence of LPW; and
- the time required to initiate and terminate LPW-related activities, which reveals the ability of LPW to stimulate economies quickly and at a significant level.

The evaluation of LPW I and II revealed that the total construction expenditure solely attributable to LPW is $6.096 billion. This figure excludes LPW expenditures of $510 million (8.5 percent) which would have occurred in the absence of LPW within the same general time frame. Conversely, it includes supplementary funding of

$606 million (10.1 percent)* that would not have occurred within the same time period in the absence of LPW. Thus, contrary to the expectations of those who believed that localities would in many cases simply substitute LPW funds for their own funds, thereby producing no net stimulus, every Federal LPW dollar was in fact responsible for stimulating $1.02 in public works construction that would not have taken place within the same time frame in the absence of LPW.

The local impacts of the expenditures attributable to LPW began relatively soon after passage of the legislation and were concentrated within a two-year period following enactment. LPW I was better timed than LPW II since Congress made LPW I funds available in October 1976 and projects were ready to begin at the start of the 1977 construction season, while LPW II projects were not approved until the latter part of the 1977 construction season. Consequently, LPW I performed somewhat better than LPW II in terms of the timing and concentration of local stimulus. Under LPW I, 42 percent of all employment, which translates into wages paid and circulating in local economies, occurred within one year following enactment, while 88 percent of all employment was generated within two years. Comparable figures for LPW II are 33 percent and 85 percent respectively.

LPW II, on the other hand, performed better than LPW I with regard to concentrated impacts when expenditures for comparable periods are examined. For example, during its first full construction season of May through October 1978, LPW II generated 46 percent of its total construction employment, as compared to 39 percent for LPW I during its first construction season. This difference is attributable to the fact that LPW II projects, as noted in Section E, were much smaller than LPW I projects and thus could be completed more rapidly.

In terms of calendar year timing, LPW I and II began generating employment (i.e., a local stimulus) in early 1977. LPW-induced construction employment peaked during the summer of 1978, when both LPW I and II projects were under construction; continued at greatly reduced levels in 1979; and with minor exceptions terminated in 1980. During this period, the national construction unemployment rate (seasonally adjusted) ranged from 9.8 percent to 14.6 percent, with rates dropping as LPW employment rose and vice versa. An examination of on-site LPW employment in 70 Labor Market Areas revealed that LPW did not "crowd out" (i.e., delay or replace) other public or private construction activity.

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* The primary sources of these added funds, most of which were provided in LPW II, consisted of local bond issues (26 percent), State grants (20 percent), and local capital budgets (14 percent). State and local surpluses accounted for only 1 percent.

In considering the nature of LPW's economic stimulus, it is important to examine its inflationary impacts. At the national level these were minimal because of the program's relatively small share (1.8 percent) of total construction spending. As would be expected given the targetted nature of the program, particularly Round II, it produced some inflationary impacts in a few local areas. Evaluation data indicate that these impacts involved material costs rather than labor.

D. EMPLOYMENT OPPORTUNITIES

Another of the three major objectives of the LPW Program was to generate employment opportunities, particularly in construction trades and related industries. Evaluation data and employment multipliers show that total employment attributable solely to LPW amounted to between 343,000 and 371,000 person-years. Of this employment, 158,000 person-years were in on-site construction (direct jobs) or supply and service firms (indirect jobs). The remaining employment (induced jobs) was in private firms that produced increased goods and services as a result of additional consumption by LPW workers, contractors, and suppliers.

The traditional method of calculating the cost per job for the LPW Program would be to divide $6 billion by the total number of person-years created, which would produce a cost per job of between $16,100 and $17,400. Since leveraging (i.e., addition of non-LPW funds to projects) and substitution (i.e., replacement of local funds with LPW funds) effects basically offset each other in LPW, this figure can be said to reflect both. It does not, however, reflect returns to the Federal government or local governments through taxes and transfer payment savings.

Accounting for savings to the Federal government associated with LPW reduced the Federal cost to just over $5.5 billion. This results in a net Federal cost per job of $14,900 to $16,100. When State and local savings are added to those of the Federal government, the net LPW cost is reduced to just over $5.1 billion. Dividing this by the employment generated results in a total public net cost per job of between $13,900 and $15,000.

During the course of LPW I and II, more than a million different persons were employed on-site in construction jobs. Of these, 67 percent were skilled workers and 29 percent unskilled workers, with 4 percent administrative or clerical. Twenty-eight percent of the persons employed were laborers, nine percent carpenters, and nine percent operating engineers, with all but four percent of the remaining workers distributed among a variety of other construction occupations. Average employment on an individual LPW project was 146 hours or four weeks, and average earnings were $1,360, for an average hourly rate of $9.36 including overtime. Total wages were $1.6 billion or 22 percent of all LPW project funding ($6 billion Federal plus $1.1 billion from other sources). Primarily because of the statutory requirement that Davis-Bacon wage rates be paid, average salaries for all categories of workers were higher than the workers' usual wages.

LPW employees were similar to other construction industry workers in most respects. However, although there was a strong representation of white males from ages 25 to 44, 22.5 percent of all LPW employees were minorities. This is more than 100 percent higher than the construction industry norm of 9.5 percent and is presumed to be primarily attributable to the LPW II 10 percent minority business enterprise requirement, as discussed in Section F of this Summary.

Thirteen percent of all LPW employees were jobless prior to taking their LPW jobs, as compared to an average of 10 percent unemployment in the construction labor force in 1978 when the LPW employee survey was conducted. The LPW work force also included more veterans, particularly Vietnam-era veterans, than the overall construction labor force. This circumstance reflects the priority given to hiring such individuals in the LPW II statute.

As expected, analysis of the LPW labor force revealed that approximately 90 percent of the employees considered construction to be their major field of work. The rate of union membership was found to be 55 percent, which is comparable to the 60 percent union membership among on-site construction workers nationwide. The evaluation also revealed that LPW workers travelled an average of 34 miles from their residences to the LPW project site, with workers on urban area projects (those in Standard Metropolitan Statistical Areas -- SMSAs) traveling an average of 24 miles and those of rural area projects (those in non-SMSAs) traveling 49 miles.

E. INFRASTRUCTURE IMPROVEMENTS

Unlike most other countercyclical programs (e.g., anti-recessionary revenue sharing and expanded public service employment), the LPW program produced long-lasting physical results in the form of improved public infrastructure. Of the 10,616 projects, almost 5,300 (50 percent) representing more than $2.7 billion (46 percent) went to construct or rehabilitate facilities that promote long-term economic development, such as water and sewer systems, access roads, port facilities, and shell industrial buildings. As a result, these projects, which are comparable to those funded by EDA under its regular economic development facilities program, not only provide services to the residents of the areas and short-term employment for workers in construction and related industries; they also help to stimulate private investment in industrial and commercial development ventures. These in turn generate long-term private sector employment opportunities.

Since the creation of long-term employment opportunities was not an objective of the LPW Program, the evaluation did not attempt to determine the extent to which such impacts occurred. However a general estimate can be obtained under the assumption that the cost of generating such opportunities is the same for LPW economic development projects as for EDA's regular public works projects. Using this approach, it can be estimated that LPW economic development projects will generate an additional 125,000 person-years of permanent private sector employment.

In addition to providing support for facilities that promote long-term economic development, the LPW Program financed a wide range of community development projects including schools, public housing, and health facilities. These projects received more than $1.6 billion, or 28 percent of all LPW funds. LPW grants also supplied $1.1 billion (19 percent of all funds) for the construction or renovation of public service facilities such as police and fire stations, as well as $470 million for cultural and recreational projects, such as parks, theaters, and gymnasiums. These projects, particularly those funded under LPW II's local prioritizing system, are now meeting the public works needs of communities in every State and territory and will continue to do so far into the future, since the LPW grant recipients estimated that the average life of their new or reconstructed public works facilities was 42 years.

A related finding of significance is that the average number of years before renovations to public works facilities become necessary is the same (i.e., 23 years) for both new projects and renovations. Thus, LPW's repair and renovation projects succeeded in bringing existing public infrastructure to "new" condition. Under LPW I, these types of projects accounted for just over 15 percent of the funds, while 25 percent of LPW II funds were used to finance repair and renovation projects. This compares with 75 percent of LPW I funds going to projects involving new construction, and only 62 percent of LPW II funds for such projects.

Consistent with the larger percentage of repair and renovation projects and the broader distribution of funds under LPW II, the average size of second round grants was almost 50 percent less than that under LPW I. Specifically, the average size of LPW II grants was approximately $470,000, as compared to almost $965,000 in LPW I. Furthermore, 70 percent of LPW II's 8,554 projects involved EDA grants for less than $500,000, as opposed to only 44 percent of LPW I's 2,062 projects.

F. MINORITY BUSINESS IMPACTS

As a result of EDA's implementation of the LPW II statute's minority business requirement, minority contractors and suppliers received contracts totalling $700 million, or 18 percent of all LPW II program funds. This level is higher than in any previous Federally funded construction program and far exceeds the 10 percent requirement set by law. Approximately 7,240 minority firms received more than 16,300 contracts under LPW II. These contracts ranged from less than $1,000 to a few for more than $1 million, with an average size of approximately $43,000. It was necessary to waive the 10 percent requirement on some projects, primarily because firms selected in good faith by the grantee were found not to be bona fide minority businesses after they had already performed the work. However, in only 306 cases (2.2 percent of LPW II funds) was the requirement waived altogether. In all other cases, at least some portion of the grant went to bona fide minority firms.

Firms owned by members of all major minority groups benefitted under the LPW II program. More than 4,000 Black-owned firms received approximately $270 million in LPW II-related contracts, while almost 2,000 Hispanic-owned firms received almost $300 million in contracts. Firms owned by Indians and Orientals also received considerable business under LPW II.

Evaluation data suggest that the minority firms that benefitted from the 10 percent requirement were substantially newer than their minority counterparts, but had for the most part been in business for close to 10 years. More than 90 percent of the participating minority firms were still in business two years after the approval of the last LPW II grant, although the success rate was lower for minority suppliers and subcontractors than for general contractors. A survey of participating minority businesses indicated a profitable LPW experience. A longer term assessment of the impact of the LPW II requirement on minority firms, including its effects on establishing continuing working relationships between minority and majority firms, is being conducted now under an EDA evaluation project.

G. CONCLUSIONS

With the completion of the comprehensive evaluation of both rounds of the LPW Program and the finishing of construction on all but a few LPW projects, it is possible to draw final conclusions on the LPW Program, many of which should be considered in developing any future programs of this nature. The final conclusions discussed in this section include those preliminary conclusions presented in the January 1978 Local Public Works Program Status Report that are still appropriate in light of additional data. Because of the importance ascribed to these conclusions and the need to place them in proper context, they are described in more detail than would ordinarily be the case in a summary section. Conclusions are presented in regard to:

- each of the LPW Program's primary objectives;
- LPW II's secondary objectives; and
- mechanics of program implementation.

1. Economic Stimulus

The LPW Program produced relatively concentrated economic impacts in areas experiencing high unemployment. It resulted in the expenditure of approximately $6.1 billion in construction-related expenditures that would not otherwise have occurred in the same time period, and data show that it did not crowd out private or other public sector construction that would have occurred in its absence. Moreover, employment data indicate that just over 85 percent of these funds were circulating in local economies within two years after passage of the legislation. This accelerated expenditure of funds occurred in the absence of any requirement that construction move quickly once underway. Consequently, to obtain more concentrated and rapid impacts in future programs, some construction completion deadlines should be included in the statute, and the mandatory project start date should occur as close to the beginning of the peak construction season (April through October) as possible.

The importance of the timing of such a program in relation to the start of the construction season raises the issue of how the initiation of such programs is determined. In the case of the LPW Program, the Congress decided in LPW I and the Administration in LPW II that the economy should be stimulated, jobs should be generated, and public infrastructure needed to be constructed or renovated. No specific data, such as national unemployment rates, construction industry employment figures, or leading economic indicators, played a formal role in the decisions to enact either round of the program.

There is widespread agreement on the desirability of including in any future program of this nature a mechanism for triggering its start to coincide not only with the construction season, but -- if a program objective is to produce a countercyclical stimulus -- also with the period of recession. In addition, there are some who advocate regional triggers. There is also, however, widespread recognition that the development of workable mechanisms of this nature is a complex, perhaps impossible, task. Predicting recessions is a task that economists and others working in the field have yet to master. Existing data have substantial shortcomings. Unemployment rates, for example, are a lagging indicator of economic problems and thus -- if used in isolation -- would either trigger a program too late to produce a countercyclical stimulus (if a high rate were used as a trigger) or (if a lower rate were used as a trigger) start programs at times when recessions are not imminent. Nonetheless, efforts are underway to develop an appropriate trigger and, if successful, should enable future programs to produce the types of countercyclical stimulus sought by proponents of an LPW III in 1979 and 1980.

Evaluation data and construction industry figures lead to the conclusion that smaller projects, which were more typical of LPW II, are completed more rapidly. For example, the smaller LPW II projects produced more employment (i.e., a greater stimulus) during their first full construction season than the larger LPW I projects. Therefore, limitations on project size in future programs would accelerate the economic stimulus.

The LPW II implementation approach, which distributed funds among States and substate areas on the basis of unemployment, produced a more targetted economic stimulus than LPW I. Adoption of the LPW II approach, together with reduction or elimination of statutory minimum State funding requirements would maximize stimulation of the economies of the most distressed areas in future programs.

As indicated previously, on an industry-wide level, the inflationary impact of LPW on construction costs was minimal, whereas on the local level, some shortages of materials caused small inflationary impacts. However, it must be recognized that the LPW Program did result in the expenditure of at least $6.1 billion that would not otherwise have been spent in the same time period and thus some inflationary impact was unavoidable.

2. Employment

The LPW program generated employment in construction and related industries at a reasonable cost to the Federal government and to the public sector overall. The average Federal cost per person-year of employment of between $14,900 and $16,100 and the average public cost per person-year of between $13,900 and $15,000 compare favorably with the $13,500 cost per person-year of EDA's ongoing development facility program. Nonetheless, data indicate that the cost per person-year could be cut by increasing the labor intensity of projects (22 percent for both LPW rounds), an approach that would reduce -- although not eliminate -- the responsiveness to local priorities that characterized LPW II. One way of increasing labor intensity is the funding of smaller renovation and rehabilitation projects which, as discussed in the following section, have the added advantage of giving existing infrastructure approximately the same useful life span as new infrastructure through means that are less costly -- and therefore less inflationary.

The LPW Program proved to be an effective means of generating on-site construction employment for white and minority males. The program did not, however, prove a useful approach to generating on-site construction employment for women, who received a somewhat smaller percentage of LPW project employment (0.9 percent) than their percentage representation (1.7 percent) in the non-administration construction labor force.

If a goal of future programs is to generate construction jobs for women, it is clear that more than the equal opportunity provisions in LPW I and II will be required. Although the employee characteristic data for LPW I and II did not provide conclusive evidence that the high level of minority participation was attributable to the LPW II MBE requirement, the analysts' judgment was that it was a major contributing factor. Consequently, to ensure significant levels of employment for minorities and women in future programs, specific statutory preferences for such employees or for minority and women-owned firms would appear to be necessary.

Skilled workers proved to be the primary beneficiaries of LPW-generated construction jobs, receiving 70 percent of the project wages. Skilled and unskilled laborers also fared well under the program, representing 28 percent of the total persons employed on LPW projects. If a goal of future programs were to generate more construction jobs for unskilled workers, preference should be given to site clearing and park projects, including the preparation of industrial parks, which have long-term economic development impacts. However, as would be the case if an effort were made to increase projects' labor intensity, such an approach might reduce the responsiveness of the program to local priorities.

The goals of the LPW Program did not include the generation of job opportunities for the long-term unemployed. Given the nature of the construction industry labor market and the absence of any legislative requirement to employ the unemployed, it is not surprising that only 13 percent of the LPW workers were previously unemployed and only 0.7 percent had been unemployed for more than 27 weeks. To ensure employment for the long-term unemployed, who are generally unskilled workers, in future programs would require special emphasis in the legislation and regulations on hiring such individuals. In addition, emphasis on rehabilitation projects with greater labor intensity would be important, as would agreements with unions to permit penetration of the construction work force by the long-term unemployed.

3. Infrastructure

The LPW Program left a legacy of new or "like new" public infrastructure that is currently serving residents of communities in every State and territory. Moreover, the new facilities and those renovated with LPW dollars have an average useful life of 42 years, with neither new or rehabilitated facilities needing renovations for an average of 23 years. Thus, it can be concluded that any future LPW program could meet the objective of creating new infrastructure, bringing existing infrastructure to "new" condition; or doing both.

As demonstrated by the results of the local prioritizing approach employed in LPW II, cities, counties, and other applicants do not use a program like LPW to fund frivolous, potentially burdensome projects. Aproximately half of all projects and all funds in both rounds went to support primary economic development projects identical to those funded by EDA under its regular development facilities program (e.g., water and sewer lines for industrial or commercial areas). Since these projects generate both short-term construction and related employment opportunities and permanent private sector jobs, they would be preferable in future programs if long-term job generation were an additional objective. Given the LPW II experience, it should not be necessary to establish statutory or regulatory procedures favoring such projects unless it is desired that more than half of the funds should be directed to them.

When permitted to select which projects to fund, LPW applicants chose smaller projects. They also increased by almost 80 percent the percentage of funding for rehabilitation and repair projects, while still using almost half of their funds for projects involving new construction. As noted previously, limitations on project size, which may increase the number of rehabilitation projects, would accelerate and concentrate the economic stimulus effects of a future program, while still resulting in facilities that will provide many years of service. At the same time, it should be noted that an increase in the percentage of funds spent for rehabilitation projects would reduce the number of permanent jobs created since new construction is more likely to generate new economic activity than renovation which, except in special circumstances, is generally directed toward maintaining employment and other economic activity.

A final related conclusion involving infrastructure is that both LPW I and II provided convincing evidence that a residual stock of State and local public works needs exists which can be used in a fiscal stimulus effort. The 25,000 project applications received by EDA during the six-week period between October 26 and December 3, 1976 were indicative of the demand for such projects, as were subsequent communications received by EDA from numerous other communities, counties, school districts, and special purpose authorities which for a variety of reasons failed to submit applications within the required time frame. The study of public works investment recently conducted for the Commerce Department's Office of Domestic Economic Policy Coordination (see Appendix C, number 8) also provided evidence of the substantial public facility needs of State and local governments. As noted previously, the projects sought under LPW were utilitarian in nature, meeting water, sewer, transportation, education, and other basic infrastructure needs.

4. Secondary LPW II Objectives

The LPW II experience demonstrated convincingly that a rigorously enforced requirement that at least 10 percent of each grant go to minority businesses will result in a significant level of contracts for firms owned by members of all major majority groups. It also demonstrated that such a requirement will not substantially raise project costs nor cause major delays in project implementation. In addition, the LPW II effort, under which $700 million or 18 percent of the LPW II program funds went to bona fide MBEs, revealed that in most areas there are ample numbers of qualified minority firms available to work on public construction projects. There were, however, grantees in areas with small minority populations who experienced difficulties in obtaining bona fide minority firms to work on their projects. Consequently, in any future public works program where minority business development and minority employment are established as objectives, the statutory MBE requirement should be modified to exclude or at least reduce MBE participation in areas with small minority populations. Such a requirement could range, for example, from five percent for areas with at least five percent minority populations to fifteen percent for areas with significantly larger minority populations.

The LPW Program also proved to be an incentive for the formation of new construction and supply firms, particularly LPW II with its $4 billion worth of projects. The 10 percent MBE requirement was particularly influential in the formation of new minority firms. Although future evaluations of these MBEs will be necessary to determine whether they can remain in business and maintain relationships with LPW II majority contractors, a minority business requirement is an effective way of stimulating the creation of new minority firms, particularly as subcontractors and suppliers.

Although the preceding conclusions make it clear that minority firms did receive substantial benefits from the MBE requirement, the accompanying problems raise questions as to its appropriateness in an effort in which accelerated construction is an objective. As indicated above, the 10 percent MBE requirement did not substantially delay construction. On the other hand, more than a thousand purported minority firms (many of which were suppliers) participated in LPW II contracts only to be disqualified as non-bona fide, a situation that would not have occurred if more time had been available to examine firms thoroughly prior to the awarding of contracts. Moreover, com- piling lists of bona fide MBEs for use in future programs is not a solution since it would preclude the development of new minority construction and supply firms -- one of the primary objectives of such a requirement.

5. Program Implementation

a. Expeditious Implementation

Among the unique features of both LPW I and II were the statutory deadlines for project review (60 days from receipt of application) and construction starts (90 days from project approval). Devised to enhance the fiscal stimulus impacts of LPW funding, these time constraints mandated unprecedented speed on the part of EDA and LPW grant recipients. Through its performance in conjunction with both programs, EDA demonstrated that a Federal agency can review and approve thousands of individual public works projects in a very short period of time. Under LPW II, the average processing time for applications was 44 days, and EDA processed and approved 8,554 LPW II projects in a 71-day period in the summer and early fall of 1977. Similarly, it is clear that State and local governments are capable of accelerating pre-construction activities to have construction underway within 90 days of project approval. The average period between applicants' receipt of grant and start of construction under LPW I was 77 days. Primarily because the timing of LPW II did not coincide with the construction season, the record was less satisfactory. However, 85 percent of all LPW II projects were underway within the 90-day deadline.

b. Local Priorities

As reflected in preceding sections, another important conclusion emanating from the LPW II experience concerns project selecton. As demonstrated by the LPW II process, local project selection is feasible. Fears that local prioritizing would lead to frivolous projects or conflicts that would impair jurisdictions' abilities to submit applications on a timely basis proved groundless. To operate a fiscal stimulus public works program expeditiously, the Federal government does not have to resort to complicated project scoring procedures which really cannot be that selective or impose Washington's priorities on State and local communities. City and county officials and school boards can agree upon project priorities that reflect local needs. In turn, their agreement can form the basis for final project decisions at the Federal level.

c. Involvement of Different Types of Government

The LPW II experience also showed that a public works fiscal stimulus can involve each of the different types of goverment that administer capital improvement programs.

Significant percentages of LPW II funds went to State, county, and municipal governments, as well as school districts. Special purpose authorities and Indian tribes also received funding. It is believed that the LPW II system resulted in a relatively equitable distribution of funds among these types of government. However, any future programs would benefit from more detailed analyses of the varying public infrastructure responsibilities of these types of governments -- responsibilities that differ from State to State.

d. Leverage Effect

Another conclusion that can be reached on the basis of the LPW II Program is that an allocation approach such as that employed under LPW II can generate other funding. Under LPW I, applicants generally requested funding for total project costs. Since applicants whose projects scored high enough received the full amount requested, other funds constituted less than 10 percent of total LPW I project costs. Conversely, under LPW II, applicants received allocations representing their fair share of the available funds. There was no relationship between the total costs of available projects and those allocations. As a result, in many instances, the costs of priority projects exceeded allocations, leading applicants to use funds from other sources -- Federal, State, and local -- to complete project financing. In total, more than $1 billion was contributed to LPW II projects from other sources, thus enhancing the program's fiscal stimulus effect.

e. Davis-Bacon and Related Wage Requirements

As a result of EDA's active enforcement of Davis-Bacon and other wage acts from the outset, fewer than one percent of the more than 150,000 contractors and subcontractors participating in the LPW Program have been found in violation of such acts. Only 671 cases required investigation, and many of these were due to inadequate grantee recordkeeping rather than actual wage underpayments. Only four contractors were required to make restitution of more than $10,000, while only 22 of the more than 150,000 were recommended for debarment.

f. Other Fraud and Abuse

As was the case with wage payment requirements, grantees and contractors operated the LPW Program with a minimum of fraud or abuse. Despite the fact that many of the grant recipients and contractors had no previous experience with

Federal construction programs, and certainly not with deadlines like those imposed by LPW, the instances of fraud and abuse were few. This experience makes it clear that State and local governments can administer a program such as LPW efficiently while complying with the numerous Federal rules and regulations involved.

7. Administrative Burden

A final conclusion resulting from the LPW experience concerns the Federal staff support required to implement a temporary program of this magnitude. In the case of LPW, term employees -- supplemented at times by regular EDA staff -- carried out the Federal responsibilities associated with the program. Not only was it difficult to locate engineers and other professionals willing to accept limited term appointments; once hired, it was difficult to retain them throughout the two- to three-year implementation process. This frequently necessitated the detailing of regular EDA personnel to assist in carrying out essential LPW tasks. Although assigning responsibility for a temporary program like LPW to an Agency with an ongoing program is preferable to establishing a new organization to administer it, the strain such an action places on the existing agency -- both in terms of its ability to carry out its own program effectively and to manage the new program efficiently -- should not be taken lightly.

CHAPTER ONE

PROGRAM DESIGN

The Local Public Works Program (LPW) included two similar yet different phases. Round I or LPW I, a Congressional initiative enacted on July 22, 1976, resulted in the availability of $2 billion for public construction grants. Round II or LPW II, proposed by President Carter on January 31, 1977, and enacted on May 13, 1977, included an appropriation for $4 billion in public construction grants. In this chapter, a brief legislative history and chronology of program implementation are presented separately for LPW I and LPW II.

A. LPW I

1. Legislative History

The Public Works Employment Act of 1976 (P.L. 94-369) became law on July 22, 1976. Title I of this Act -- The Local Public Works Capital Development and Investment Act -- became known as the Local Public Works Program or LPW. Along with the countercyclical revenue-sharing program authorized by Title II, LPW I constituted a response of the Congress to the recession of 1973-1975 and its lingering after-effects. The legislation was part of a package which the Congress passed July 22, 1976 after President Ford's July 6 veto.

The LPW legislation authorized the Economic Development Administration (EDA) to approve up to $2 billion in 100 percent Federal grants for State and local public works projects that would stimulate the economy, generate employment, and provide useful public facilities. The funds could also be used to supplement public works projects funded by other Federal agencies, and State and local governments.

The LPW I legislation required that:

- EDA prepare regulations and procedures for implementing the program within 30 days of enactment;
- EDA approve or deny a project within 60 days of receipt of the application;
- on-site labor begin within 90 days of project approval;
- 70 percent of the funds go to areas with unemployment rates in excess of the national average; 30 percent of the funds go to areas with rates of unemployment below the national average, but above 6.5 percent;

- unemployment rates be based on the most recent three-month period for which accurate data were available;

- priority be given to local government projects (including those of school districts); and

- EDA consider the extent to which proposed projects would contribute to reducing unemployment.

On September 22, 1976, an appropriation conference report was adopted providing $2 billion (of which $10 million was reserved for program administration) to implement the LPW program. The appropriations bill was signed into law by President Ford on October 1, 1976.

2. Program Implementation

As displayed in Table 1, EDA published final guidelines for the program on October 18 and announced that it would begin to accept applications on October 26. The LPW I Program Guidelines established an allocation of funds among the States based on severity and magnitude of unemployment. After adjustments for the statutory minimum State allocation of $10 million and the maximum of $250 million, 65 percent of the funds were allocated on the basis of the number of unemployed in each State and 35 percent on the basis of each State's unemployment rate. Within each State, projects in areas with an unemployment rate higher than the national average would compete for 70 percent of the State's allocation, while projects in areas with rates between the national average (then 7.78 percent) and 6.5 percent would compete for 30 percent of the State's allocation.

The scoring procedure for selection of projects within each State was based on area unemployment rate (25 percent); number of unemployed in the project area (30 percent); ratio of labor costs to total project costs (30 percent); per capita income of the applicant jurisdiction (15 percent); and bonus points for long-term project benefits (5 to 10 percent), type of applicant (5 percent bonus for local government, 3 percent for others), and the relationship of the project to local plans (5 percent).

Project eligibility criteria included:

- a $5 million maximum (of EDA funds) for each project;

- labor intensity ratio (labor costs/total costs) of at least 10 percent, but no more than 80 percent, since it was assumed that projects with a labor intensity ratio of more than 80 percent might include only routine maintenance, not the construction of new facilities or improvements to existing ones;

TABLE 1

LPW I - CHRONOLOGY OF EVENTS

1976	
July 22	Congress enacts Local Public Works Program with $2 billion authorization over President Ford's veto
August 23	EDA publishes draft guidelines and applications (Meets 30-day legislative requirements)
October 1	$2 billion appropriation enacted for LPW I
October 8	EDA issues first edition revised guidelines (Final guidelines issued October 18)
October 26	First applications received
December 3	Cutoff for submission of applications (December 9 for resubmission of corrected applications)
December 23	Preliminary approvals/denials announced
December 27	First grant awards made
1977	
Early February	Last grant awards made

- a certification by the applicant that other funds were not immediately available to enable the project to get underway, thus attempting to minimize the substitution of Federal funds for State and local funds; and
- assurances that plans and specifications were sufficiently complete to enable a construction start within 90 days of project approval.

Because of the large volume of projects, EDA established a procedure for avoiding undue concentrations of funds in areas within a State (or county). Funding benchmarks based on the sub-state area's percentage of State (or county) unemployment were established. Projects were then selected by score until the funding awarded exceeded the area benchmark.

EDA received more than 25,000 applications between October 26, 1976 and the December 3, 1976 cutoff. Of these, more than 22,000 projects were determined to be eligible and were scored. All projects which were not to be approved were denied on December 23, 1976, meeting the 60-day statutory deadline. Final project processing and awards took place between December 27, 1976 and early February 1977.*

B. LPW II

1. Legislative History

During the period when LPW I applications were being accepted, Jimmy Carter was elected President. One of the major efforts during the Presidential transition period was the development of an economic stimulus package which contained an expanded Local Public Works Program. On January 31, 1977, eleven days after taking office, President Carter proposed to the Congress a $31.2 billion package which included a two-year, $4 billion LPW II Program. In his message, the President indicated that some of the legislative provisions of LPW I were under review and that changes would be made in provisions which had proven inequitable.

Anticipating President Carter's support for an additional $4 billion Local Public Works Program, leadership of the House Committee on Public Works and Transportation and the Senate Committee on Environment and Public Works had already introduced extension legislation. In late January and early February the Committees held hearings* on LPW I and the LPW II bills at which Commerce Secretary Kreps discussed the Carter Administration's objectives for LPW II, as well as several operational principles.

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* For a more detailed description of the LPW I program, see pages 1-7 of the Local Public Works Program Status Report, Department of Commerce, Economic Development Administration, January 1978.

Following the hearings, EDA officials worked closely with Congressional staff in designing an improved LPW Program that would meet six policy objectives:

- maximize the stimulus effect of the program by starting construction as soon as possible and shortening the periods within which the construction would take place;
- target funds to areas of highest unemployment in each State in order to reach the areas of highest economic distress and to minimize effects on wages and prices;
- reduce LPW I funding inequities among different areas and types of governmental units;
- place maximum emphasis on local decisionmaking in the selection of projects;
- make the program more predictable by allowing eligible applicants to know in advance how their projects would fare, thus avoiding unrealistic expectations and excessive application submissions, as well as facilitating State and local planning; and
- increase the program's efficiency by reducing the administrative workload on LPW applicants as well as on EDA.

In addition to recommending such specific changes as eliminating the 70 percent/30 percent fund distribution requirement and establishing a separate fund for Indian projects, EDA officials and staff provided the Congressional Committees with suggested legislative language for making the proposed modifications.

This type of cooperation continued throughout the legislative process, which culminated with Congressional approval of the LPW II statute on May 3. Ten days later on May 13, President Carter signed both the LPW II bill and an accompanying $4 billion appropriations bill into law, just over 100 days after he proposed the program.

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* For a detailed discussion of the approaches and changes made by the House and the Senate, see pages 7-13 of the Local Public Works Program Status Report, Department of Commerce, Economic Development Administration, January 1978.

Like LPW I, the new statute, the Public Works Employment Act of 1977, outlined a timetable for implementation, allowing 30 days for the publication of regulations, 60 days for decisions on applications, and initiation of on-site labor within 90 days of approval. Based on EDA's LPW I experience, however, the new statute made several changes in the implementation of LPW II. These changes included the elimination of the LPW I requirement that, within States, 70 percent of the funds go to areas with unemployment rates above the national average, and 30 percent to areas with rates below the national average -- a requirement which had proven overly advantageous to areas with unemployment rates below the national average. In addition, the statute adopted the LPW I approach of allocating funds among the States according to a formula that distributed 65 percent of the funds on the basis of the number of unemployed in each State and 35 percent on the basis of each State's unemployment rate. However, Congress modified the LPW I approach by raising the minimum allocation for a State from one-half of one percent to three-quarters of one percent. This meant that under the $4 billion LPW II Program the minimum State funding level was $30 million, versus $10 million under the $2 billion LPW I Program.

The LPW II legislation also contained several provisions included by the Congress as secondary objectives. In recognition of discrimination against minorities in the construction and supply industries, at least 10 percent of each LPW II grant was required to be expended with minority business enterprises (MBEs). In addition, hiring preference was to be given to disabled and Vietnam-era veterans, and all materials used on the projects were to be produced, mined, or manufactured in the United States. Buildings were to be designed and constructed to insure access to the handicapped and to the elderly.

2. Program Implementation

In addition to the changes already outlined, both the law and procedures were modified under LPW II to permit the development of sub-state allocations called planning targets. These planning targets divided the $3.795 billion that remained after the following initial deductions had been made:

- $100 million for Indian projects;
- $70 million to fund projects whose Round I applications had been erroneously denied;
- $20 million for territories; and
- $15 million for program administrative costs.

Within their planning target amount, local governmental units could set their own project priorities. These planning targets were calculated using the same 65/35 formula that divided funds among the States and reflected any funding received in Round I. Planning targets in amounts greater than $75,000 were determined for three categories of applicants: (1) "primary cities" (i.e., those with populations greater than 50,000); (2) jurisdictions in the balance of counties with primary cities; and (3) jurisdictions in counties without primary cities. Within States, EDA also set planning targets for pockets-of-poverty, with $1 million set aside for each pocket-of-poverty city to a maximum of $20 million per State.* These changes over the LPW I approach resulted in the following general improvements:

- the targeting of funds to areas of greater unemployment (e.g., 72 percent of LPW II funds went to areas with rates above the national average versus 63 percent in LPW I, the average unemployment rate for areas receiving funds was 8.9 percent for LPW I versus 9.4 percent for LPW II, only 46 percent of the LPW I funds went to areas with unemployment rates of 9 percent or more versus 54 percent under LPW II, 23 percent of LPW I funds went to areas with unemployment rates below 6.5 percent versus only 14 percent under LPW II);

- the distribution of a greater proportion of funds and projects to areas with the largest numbers of unemployed persons (e.g., cities over 50,000 with 45.9 percent of the nation's unemployed population received 47 percent of LPW II funds versus 38 percent of LPW I monies);

- a wider participation by different types of government (e.g., all 50 State governments received funds under LPW II versus 15 under LPW I, while over 900 county governments received funds under LPW II versus 190 under LPW I);

- an increase in the participation rate of the 100 largest cities (65 percent under LPW I versus 93 percent under LPW II);

- an increase in the number of small communities receiving funds (e.g., 570 communities under 5,000 population received funds under LPW I versus 1,580 under LPW II and 385 communities under 2,500 population received funds under LPW I versus 1,000 under LPW II); and

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* For a more detailed discussion of planning targets, see pages 16-18 of the Local Public Works Program Status Report, Department of Commerce, Economic Development Administration, January 1978.

- more funds were leveraged from other sources ($1 billion in LPW II versus $160 million in LPW I).

As reflected in Table 2, planning targets were established for thousands of State and local jurisdictions in mid-July, and by September 30, 71 days later, 8,554 LPW II projects totalling approximately $4 billion had been processed and approved.

TABLE 2

LPW II - CHRONOLOGY OF EVENTS

1977

January 31	President Carter proposes $31.2 billion Economic Stimulus Package including $4 billion for LPW II
May 13	LPW II legislation and appropriations signed into law by President
May 16	Initial allocations of LPW II funds among States announced
June 20	Planning targets announced for Indian tribes and Alaskan native villages
July 15	Final sub-state planning targets of funds made available for State governments, county governments/school districts, and primary and non-primary city governments/school districts
July 21	First LPW II grant awards made
August 1	Planning targets announced for pockets-of-poverty
September 30	Last grant awards made

CHAPTER TWO

PROGRAM ADMINISTRATION

A. PRE-APPROVAL MONITORING

Because many LPW applicants were unfamiliar with the Federal grants process, the application form for LPW was designed to simplify the preparation of applications and EDA review. For example, whenever possible, applicants needed only to provide an assurance of compliance with a requirement, rather than a detailed description of how the applicant would comply. Projects under both Rounds were required to comply with civil rights, environmental, Davis-Bacon, and other standard Federal requirements germane to construction projects. In addition, LPW II projects had to comply with the 10 percent Minority Business Enterprise (MBE) and "Buy American" requirements, as well as the access for the handicapped and veteran's preference provisions. As a result, EDA had to develop procedures to provide adequate review of the assurances for these requirements.

Environmental reviews can often be complicated and lengthy. In LPW I, EDA discouraged projects which required processing or reviews that might exceed the 60-day project decision deadline. Moreover, since projects in LPW I were selected by formula, a policy which excluded potentially difficult projects was considered more efficient and of little consequence to applicants. In LPW II, however, project selection was based on local priorities. As a result, there was concern that excluding projects requiring extensive review could be inimical to local priorities. In addition, there was a legal precedent which required that the Agency make every effort to comply with statutes such as the National Environmental Policy Act (NEPA) within the legislatively mandated timetable. Extra resources were therefore devoted to conducting environmental reviews. If necessary, projects were modified to eliminate or reduce adverse impacts, within the processing time available. As a result, local priorities were respected without disregarding environmental considerations.

EDA performed a pre-approval civil rights compliance review on every LPW project. The review focused on an assessment of each applicant's current civil rights posture to determine if they were in compliance with Federal civil rights laws, and an examination of the project service benefits to assure that a proposed project or group of projects would not deny benefits to minorities.

Because of the time pressures generated by the LPW Program, some of the reviews were less thorough than those conducted under EDA's "regular" public works program. However, EDA's Regional Offices were still able to identify potentially serious problems and resolve them prior to disbursing funds. This informal resolution of potential problems kept the number of formal complaints to a minimum. For example, Round II of LPW produced only 15 formal civil rights complaints, all of which were resolved.

B. POST-APPROVAL MONITORING

Compliance with many provisions of the LPW Act necessarily required action by grantees and their contractors after approval of the project. EDA monitored grantee compliance, but attempted to do so with a minimum of red tape and intrusion. Since adherence to the 90-day construction start deadline was essential to the fiscal stimulus purpose of the program, and since the LPW II 10 percent MBE requirement was entirely new to Federal programs and could potentially present great difficulties for grantees and contractors, these provisions received special attention in the project monitoring phase.

Under LPW II, EDA took two steps to assist grantees in complying with the standard Federal requirements with which many already had some experience. The first was publication of "Legal Requirements Applicable to Projects Funded under the Public Works Employment Act of 1977." This document restated the requirements established in the regulations, explained them, and offered suggestions on how compliance might be achieved. The second step was a mid-term test of compliance which could lead to further guidance or corrective action if necessary. As the projects were getting under way, EDA developed a sample project site monitoring effort to test compliance with requirements during construction. This review, conducted by EDA Regional Office staff during mid-1978, consisted of structured visits to 455 projects. This sample group of projects (just over 5 percent) reflected the universe of project size, type, location, and type of grantee in the LPW II program. The results of the monitoring effort showed that compliance was improved by:

- familiarity with requirements and means for complying with them. For example, most grantees and contractors had experience with the Davis-Bacon requirement and had little difficulty complying;

- ability to determine easily the existence of facts or conditions which relate to compliance. For example, many grantees and contractors had difficulty ensuring compliance with the "Buy American" provision, since labels and even brand names do not provide full information on the source of products and supplies;

- specificity and clarity of the requirements; and

- screening by EDA during application processing, particularly for information which had a direct relationship to a requirement or prohibition. For example, project applications which did not comply with the prohibition against channelization or other alterations of natural watercourses were either modified or denied by EDA.

C. FINANCIAL MANAGEMENT

1. Cost Accounting

Accounting for project costs, disbursements, and audits followed the standards and procedures established by Federal Management Circular (FMC) 74-7. Grantees were asked to determine if their existing financial management systems met the FMC 74-7 requirements. Grantees could request and receive EDA guidance in establishing a system that met the requirements, if necessary.

2. Disbursements

When on-site construction work on a project began, EDA issued a U.S. Treasury Letter of Credit for 50 percent of the grant amount. When construction was 40 percent complete, a second Letter of Credit for the remaining 50 percent of the grant amount was issued. Grantees could draw on the credit as costs were incurred. By February 5, 1980, all initial letters of credit had been issued; by September 30, 1980, final letters of credit had been issued for all but 46 LPW I Projects and all but 343 LPW II Projects.

3. Audits

Of the 10,616 LPW grants awarded by EDA, 9,133 grants representing 98.7 percent of funding are being audited. All grants of $120,000 or more (8,453 grants representing 98.2 percent of funding) are subject to audit. However, to avoid the burden and expense of audits for projects of relatively small dollar value, EDA and the Department of Commerce's Office of the Inspector General agreed that only a sample of projects involving grants less than $120,000 would be audited. Of the 2,163 grants under $120,000, 280 (0.2 percent of funding) are included in the sample, with an additional 400 (0.3 percent of funding) to be audited pursuant to State law.

The LPW audit is concerned with both financial and compliance issues. The auditors must meet the criteria established by the U.S. General Accounting Office (GAO). Grantees make the arrangements for the audits in most cases by engaging independent public accountants. In addition to audits arranged for by grantees, the Inspector General's Office is performing audits on a sample of 5 percent of all grants, and projects of other Federal agencies which have received LPW supplementary funds are undergoing a single audit to satisfy all Federal requirements. Those LPW projects involving extended construction time are subject to interim audit at least once every two years, as well as upon the completion or termination of the projects. All others are audited at completion. A waiver of a final audit may be granted if the funds expended between the time of the interim audit and final project completion are not significant. By September 30, 1980 4,795 projects had completed final audits, 3,573 final audits were underway, and 765 projects had not yet begun final audit.

In the 5,454 completed audits (including 4,795 final audits and 659 interim audits), costs of $2,761,762,893 were claimed of which $2,669,774,811 or 96.7 percent have been allowed, $26,610,605 or 1 percent have been disallowed, and $65,377,477 or 2.3 percent are still under consideration. The disallowed costs were spread over 1,000 projects and were attributable to:

- ineligible methods of contracting or fee determination for architectural and engineering (A/E) services -- 24 percent;
- ineligible costs claimed for services provided prior to application -- 19 percent;
- failure of grantee's administrative system to meet one or more of the Federal criteria relating to the maintenance of records or effective control over the use of funds -- 16 percent;
- premature drawdowns on letters of credit -- 9 percent;
- failure to comply with Davis-Bacon requirements -- 8 percent;
- failure to meet 10 percent MBE requirement or obtain a waiver -- 2 percent;
- failure to comply with other LPW Program requirements -- 2 percent; and
- miscellaneous violations -- 20 percent.

The recovery of funds representing ineligible costs claimed has been somewhat complicated by the letter of credit disbursement arrangement. The letter of credit system was imposed government-wide at the time of LPW by U.S. Treasury Circular 1075 and Treasury Fiscal Requirements Manual 2000. Although EDA found the letter of credit system to be generally efficient, EDA suggested that a 10 percent holdback be imposed on LPW grants; however, this suggestion was not consistent with directives of the Office of Management and Budget. Subsequently, at the time of final audit, many grantees have found themselves owing the Federal government funds which had long since been spent. This has significantly impeded the expeditious recovery of funds and slowed project close-out by months.

D. CONSTRUCTION MANAGEMENT & PROGRESS

1. Construction Starts

Of the 2,062 projects approved under LPW I, three projects were terminated for the convenience of the grantees and the U.S. Government. Of the remaining 2,059 projects, 2,041 projects or 99 percent were underway within the 90-day post-approval deadline. Ninety-day extensions of the deadline were granted to 18 projects, 2 of which received a second extension. In LPW I, extensions were granted for the following reasons:

- bid problems, with grantees receiving no bids or bids that substantially exceeded available funds (3 extensions);
- weather conditions (6 extensions). Weather conditions were not responsible for many delays in Round I, since deadlines fell between the end of March and early May; and
- other reasons, including litigation (9 extensions).

In LPW II, 7,266 projects or 85 percent were underway within the 90-day deadline in spite of the severe winter weather during the months (November and December 1977) when the deadlines fell. Extensions were granted to 1,288 projects for the following reasons:

- weather conditions (264 extensions);
- bid problems (448 extensions);
- grantee problems with the MBE requirement (183 extensions); and
- other reasons, primarily litigation and other problems, such as local opposition or failure to gain State legislature approval (393 extensions).

Second extensions were granted to 770 projects, with third and fourth extensions granted to 171 and 26 projects, respectively. Weather conditions and bid problems were the prime reason cited for these additional extensions.

2. Project Completions

By September 30, 1980, construction was completed on 1,868 or 91 percent of the LPW I projects and 7,264 or 85 percent of the LPW II projects.

CHAPTER THREE

PROGRAM ACCOMPLISHMENTS

A. INTRODUCTION

One objective for the implementation of the LPW I Program, was "to carry out a comprehensive evaluation of both the direct employment impact and the indirect or stimulative impact of the projects funded."* To this end, evaluation of the LPW Program must determine the extent to which the program goals -- to provide an economic stimulus, to provide employment, and to build needed infrastructure -- were met. The program's accomplishments presented in the following sections represent the results of the various evaluation tasks completed by or for the Department of Commerce as part of the comprehensive evaluation of LPW. With the exception of the employment generation report, which is presented in its entirety in Section C of this chapter, all evaluation task reports are being released under separate cover. The various reports conducted by or for the Commerce Department are listed in Appendix C, while LPW studies carried out by other organizations are identified in Appendix D.

The major component of the evaluation of the LPW Program was the microeconomic evaluation. This evaluation investigated the impacts of the program on job creation and on local areas that received LPW grants, including an examination and assessment of the various economic, demographic, political, and locational characteristics of individual communities. The various issues considered in this microeconomic evaluation were organized into a four-part evaluation framework that focused on program outcomes and their relation to specific program policy parameters. This framework consists of:

- local government response to the LPW Program;
- local economic stimulation;
- construction industry job creation; and
- program impact in the form of tax returns and savings in transfer payments.

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* "Local Public Works Capital Development and Investment Program, Final Rulemaking," 13III (316.f), _Federal Register_, Vol. 41, No. 164, August 23, 1976, p. 35670.

The portion of the microeconomic evaluation devoted to local government response focused on the budgetary and capital expenditure decisions made by the local governments that received LPW funds, as well as the net benefit of the LPW projects ultimately constructed. Key areas of concern were:

- the budgetary impacts of LPW funds on the local community;
- the process by which local governments selected projects in making application for LPW funds; and
- the valuation of the facilities created by the program.

A sample of 250 projects within 100 local governmental units was analyzed by Abt Associates, Inc. under contract to EDA (Report D). Summaries of the results of the analyses of the application development process, local fiscal response, and the long-term impacts are presented throughout the following sections.

The portion of the microeconomic evaluation dealing with local economic stimulation focused on the interactions between existing local economic conditions and the stimulus provided by the program. Beyond the impacts of LPW on direct job creation, several issues were assessed relating to the broad range of economic impacts of LPW funding in different local market contexts. These issues included:

- the major secondary employment effects of the program;
- possible inflationary impacts;
- the timing of direct job creation in relation to local area employment cycles; and
- the impact of the MBE and other special LPW Program requirements.

Local economic impacts, degree of utilization of the capacity of construction and related supply industries, inflationary impacts, and the impact of the MBE and other special program requirements were analyzed by Abt Associates, Inc. under the same contract to EDA mentioned above (Report D). The timing of direct job creation in relation to local employment cycles was examined by EDA's Program Evaluation Division staff (Report E).

The portion of the microeconomic evaluation devoted to the creation of jobs in the construction industry estimated and monitored the number, composition, duration, and timing of LPW construction employment over the life of the program, based on payroll data reported to EDA on the LPW Payroll Reporting Form. Payroll data were collected from a 10 percent sample of projects, stratified by project cost, infrastructure category, type of construction activity, EDA region, and SMSA/non-SMSA location to represent the universe of 10,616 projects. In addition, a survey was conducted by the Bureau of the Census to produce a socioeconomic profile of LPW employees. Finally, five broad infrastructure categories, or project types, were compared in terms of cost-effectiveness (as measured by the direct person-months of employment generated per $100,000 expenditure) as well as rate of employment build-up (as measured by the percentage of direct employment created in the first six months of on-site activity). EDA staff carried out the analyses of the payroll (in Report A), the employee characteristics (Report C), and the project type (Report B) data.

The last portion of the LPW microeconomic evaluation, which was also conducted by EDA Program Evaluation staff, involved an examination of program returns from taxation and savings in transfer payments to determine the net cost of the LPW Program (Report F). In this analysis, the budgetary cost to the Federal government was estimated, as well as the total net cost of the LPW Program to all levels of government.

In addition to the microeconomic evaluation, numerous other studies of LPW were conducted. Notable among these is the evaluation of the national impacts of LPW prepared by Chase Econometric Associates, Inc. under contract to the Office of Domestic Economic Policy Coordination in the Department of Commerce. Summaries of the results of this evaluation are included in the following sections, and the final report (Report G) is being published as are the other individual LPW evaluations listed in Appendix C.

B. ECONOMIC STIMULUS

An assessment of the economic stimulus generated by the $6 billion in LPW expenditures requires consideration of several factors that must be taken into account in assessing any program's ability to produce an economic stimulus. These factors include:

- the extent to which a program stimulates activities that would have been undertaken within the same time period in the program's absence;
- the extent to which the Federal funding stimulates other spending;
- the time required to initiate and terminate a program's stimulus-producing activities (that is, whether a program can produce concentrated impacts);
- a program's fiscal relief to state and local governments; and
- a program's inflationary impacts, particularly at the local level.

1. Substitution and Addition of Funds

As described below, Abt Associates, Inc. estimated net substitution of LPW funds for State and local funds at only 8.5 percent and net leveraging of non-LPW funds at 10.1 percent. Consequently, the net impact of LPW is estimated at $6 billion plus 1.6 percent ($96 million) to account for net substitution and leveraging.

The effect of an injection of Federal funds into the economy is diluted to the extent that fiscal substitution occurs. In the case of LPW, this means the extent to which previously appropriated or planned local expenditures for public works construction were replaced with funds provided through the LPW grant. This phenomenon should not, however, be considered in isolation. The impacts of the LPW funding on the timing of public works expenditures, the end use of funds released as a result of substitution, and the leveraging of funds from other sources must also be taken into account.

In terms of the timing of the stimulus, the examination of fiscal substitution should include "project acceleration," which occurs when a planned local project is begun ahead of the original construction schedule because of the grant inducement. With regard to the end use of the funds released as a result of substitution, it should be recognized that if the released funds are used to finance another capital project for the locality during the LPW construction period, the substitution impact is negated. Finally, the funds leveraged by the LPW grant from non-LPW sources (especially state and local governments) must be added to LPW resources to determine the total stimulative effect of LPW. However, some of this leveraging shifts resources out of other capital projects, and this amount must be subtracted from total leveraged funds. In summary, then, to understand the real stimulus effect of LPW, it is necessary to estimate the proportion of LPW obligations representing deferred and accelerated expenditures as well as the end use of released funds.

On the basis of an Abt Associates, Inc. survey of 100 randomly-selected state and local governments, it is estimated that 20.8 percent of the sample LPW funding represented substitution of LPW grant funds for local funds where the capital project would have been undertaken within the year. This is comparable to a macroeconomic estimate of gross substitution by Chase Econometric Associates, Inc. of roughly 26.6 percent, an estimate based on an non-random sample of 50 LPW grantees. However, of the 20.8 percent found by Abt to be available as a consequence of LPW grants, 12.3 percent was spent on construction of another capital project for the locality within the year. Thus, as indicated above, net substitution is estimated at 8.5 percent.

Funds leveraged from non-LPW sources, on the other hand, are estimated at 13.7 percent. Accounting for the extent to which leveraged resources were shifted out of other capital projects results in a reduction of the total leveraging estimate to 10.1 percent. Considering both net leveraging and net substitution, the total funding impact attributable to LPW includes an additional 1.6 percent, for a total of approximately $6.096 billion. In other words, even considering the impact of substitution, every LPW grant dollar resulted in almost $1.02 in public works construction that would not have taken place in the absence of LPW within the same time frame.

2. Program Timing

As described in more detail below, a substantial portion of the construction on both LPW I and LPW II projects occurred within 12 months after passage of program appropriations, while most of the remaining construction took place within the succeeding 12 months. In other words, the construction and related activities stimulated by LPW produced major impacts relatively quickly after Congress made funds available and continued to do so for two years following the appropriation of funds.

The timing of LPW construction activities was accelerated by the requirement in both LPW statutes that construction be initiated on all projects within 90 days of their approval. There were no requirements in the statutes concerning timing of subsequent project activities or project completion. However, as indicated above and confirmed by data on the disbursement of LPW program funds and construction employment, even in the absence of such requirements, project activity moved at a fairly rapid pace.

Traditionally, the timing of disbursements of Federal funds (i.e., Treasury payments) has been used to estimate the timing of a program's impacts. However, in the case of LPW, such disbursements lagged substantially behind actual expenditures at the local level. For example, despite EDA's encouragement to grantees (e.g., cities and counties) to expedite requests for disbursements, many reimbursed contractors, who had already paid employees and sometimes suppliers, with funds available from non-LPW sources. It was only subsequently, when other sources were exhausted, that the grantee applied for LPW funds, a procedure which ultimately resulted in Treasury disbursements. Despite this built-in delay, within the first year after enactment of the LPW I legislation, 34 percent of the program's funds had been disbursed; by the end of the second year after enactment, 81 percent had been disbursed. In the case of LPW II, 24 percent of program funds had been disbursed by the end of the first year after enactment, with 81 percent disbursed by the end of the second year. The first-year lag under LPW II is primarily attributable to the timing of the start of LPW II on-site construction during the winter of 1977. LPW disbursement data for each round of the program is presented in Table 3, with disbursement patterns presented in Figure 1.

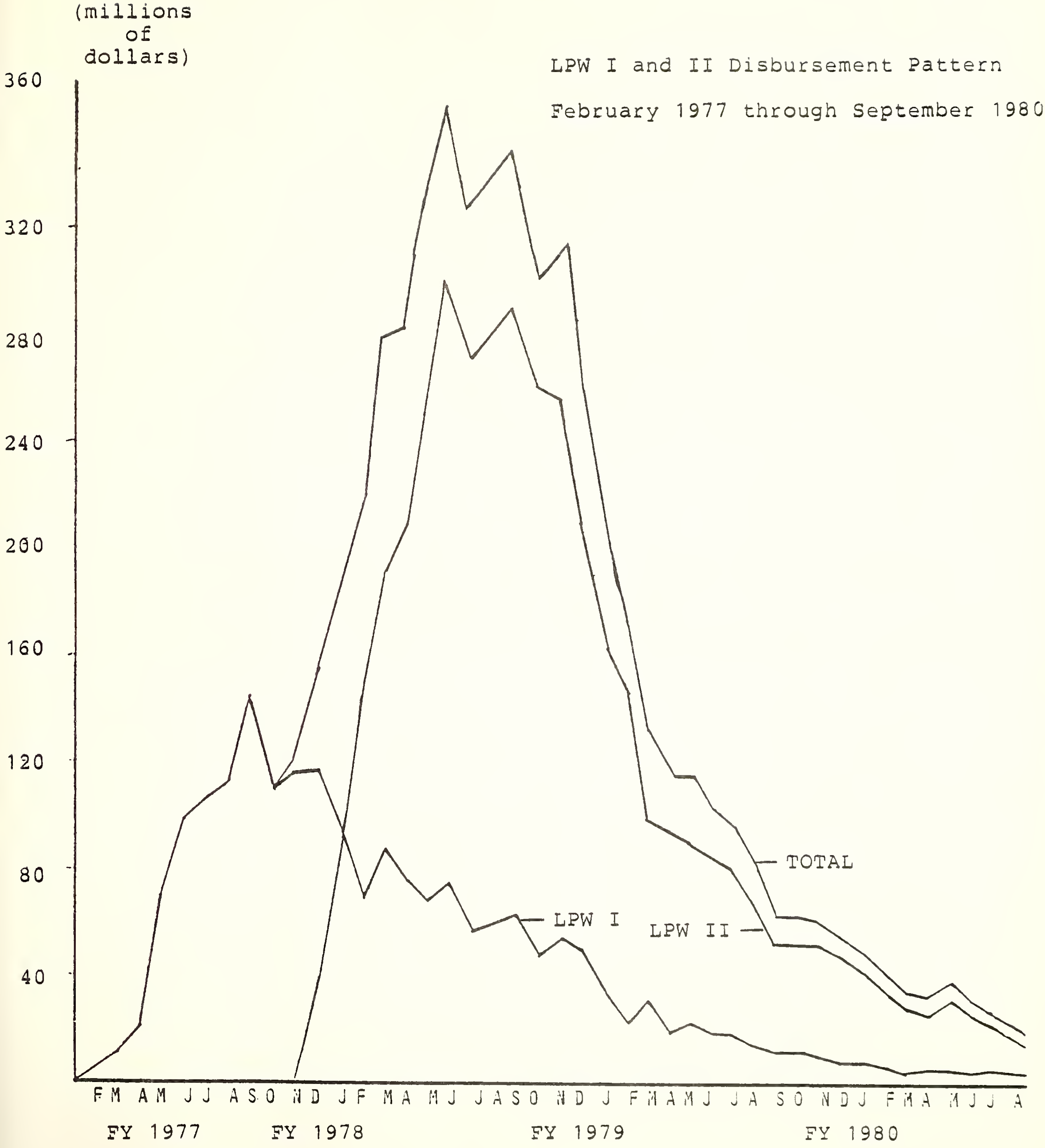
TABLE 3

LPW Disbursements
(Amounts in Millions)

	LPW I	LPW II	Total	Cumulative
FY 1977				
February	*	0	*	*
March	10	0	10	10
April	25	0	25	35
May	70	0	70	105
June	100	0	100	205
July	108	0	108	313
August	116	0	116	429
September	147	0	147	576
FY Total	576	0	576	
FY 1978				
October	111	0	111	687
November	117	4	121	808
December	118	39	157	965
January	95	93	188	1,153
February	69	151	220	1,373
March	87	191	278	1,651
April	74	208	282	1,933
May	68	258	326	2,259
June	74	296	370	2,629
July	57	270	327	2,956
August	64	289	353	3,309
September	47	261	308	3,617
FY Total	981	2,060	3,041	
FY 1979				
October	56	257	313	3,930
November	49	210	259	4,189
December	36	164	200	4,389
January	24	145	169	4,558
February	31	101	132	4,690
March	18	96	114	4,804
April	23	91	114	4,918
May	19	86	105	5,023
June	17	80	97	5,120
July	15	65	80	5,200
August	11	52	63	5,263
September	11	51	62	5,325
FY Total	310	1,398	1,708	
FY 1980				
October	10	51	61	5,386
November	8	46	54	5,440
December	8	40	48	5,488
January	6	34	40	5,528
February	4	27	31	5,559
March	5	25	30	5,589
April	3	34	37	5,626
May	4	26	30	5,656
June	5	21	26	5,682
July	1	21	22	5,704
August	2	12	14	5,718
September	2	12	14	5,732
FY Total	58	349	407	
Total	1,925	3,807	5,732	

* - Less than $100,000.

FIGURE 1



LPW I and II Disbursement Pattern

February 1977 through September 1980

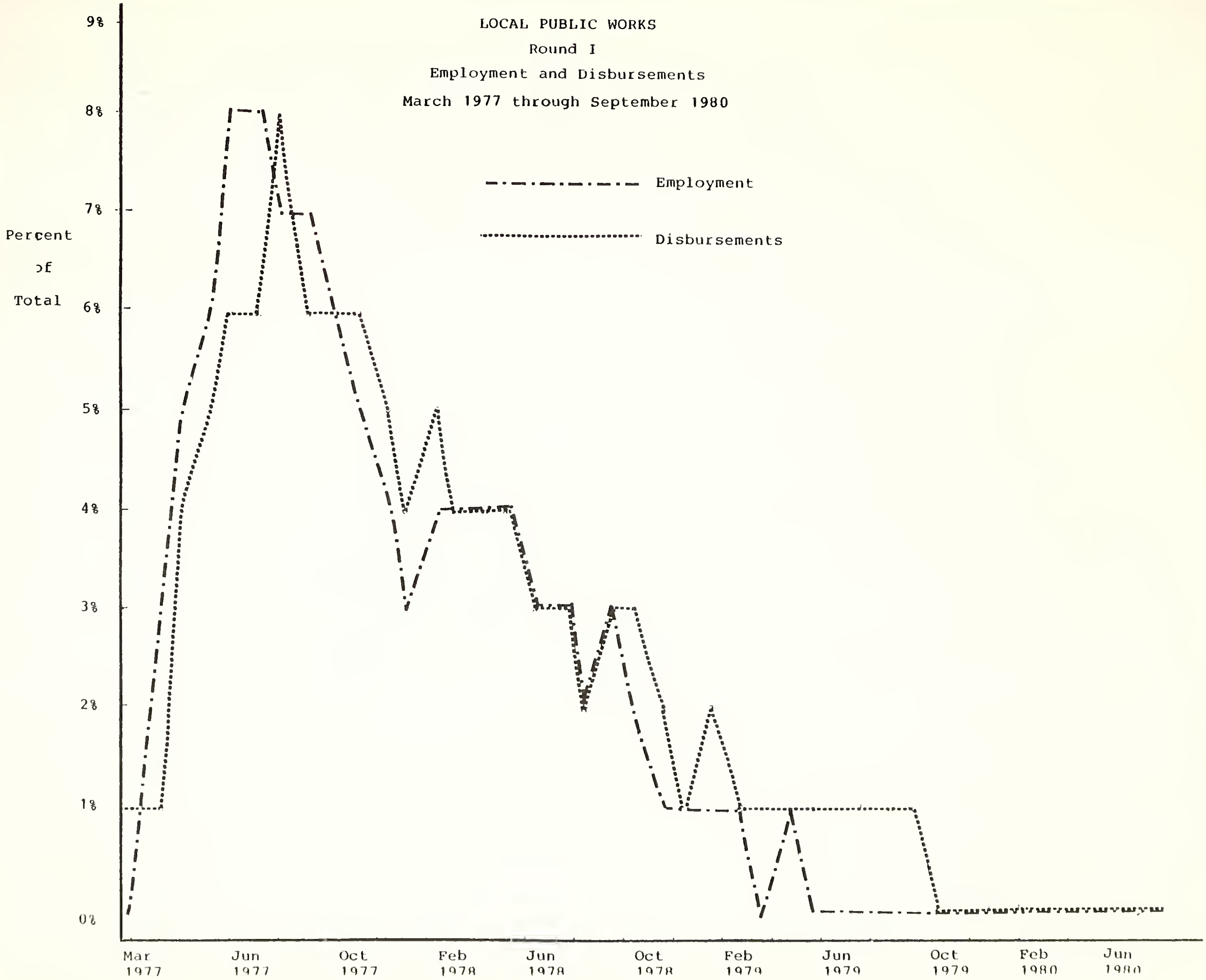
Because of the delays described above, disbursement patterns are not as useful as the timing of construction employment on LPW projects in providing an accurate reflection of the timing of the program's economic stimulus and the extent to which that stimulus was concentrated. As illustrated in Figures 2, 3, and 4 which compare disbursement and employment build-up patterns, LPW employment generation began in January 1977, only three months after LPW I funds were appropriated, and continued at significant levels through October 1978. Within one year of enactment of Round I, 42 percent of the total construction employment for that Round had been generated, with 88 percent generated by the end of the second year. Round II generated 33 percent of its total construction employment within the first year after enactment, with 85 percent generated by the end of the second year. Again, the differences between the two programs are primarily attributable to seasonal factors. During its first full construction season, which includes the key construction months of May through October, LPW I generated 39 percent of its construction employment, as compared with 46 percent for LPW II. This difference is probably attributable to LPW II's smaller project size, which permitted faster completion of projects.

In terms of calendar year timing, the data indicate that combined LPW I and LPW II monthly disbursements peaked in the second quarter of 1978, while direct program employment commenced in early 1977, peaked in 1978, and continued into 1979 and 1980. At the time LPW I and II were generating employment opportunities, the construction unemployment rate was approximately 10 percent. An examination of LPW on-site employment for a sample of 70 Labor Market Areas or LMAs revealed that LPW employment did not "crowd out" other construction activity.

3. Local Fiscal Relief

An additional side benefit of the LPW Program -- particularly LPW II, which permitted grantees to submit project applications in order of local priority -- was its provision of local budgetary relief (i.e., its role in funding the construction or renovation of public facilities that would otherwise not have been funded, or have been funded through the assumption of debt or other less appealing measures). This type of impact requires careful examination, particularly in light of evidence that often in the past, local governments tended to build up surpluses during economic expansions and draw down surpluses during contractions. To assess the extent of local fiscal relief attributable to LPW, local budgets were examined to determine the sources of leveraged funding and the end use of funds freed by fiscal substitution. Major sources of leveraged funds included local bond issues (26 percent), state grants (20 percent), and local capital budgets (14 percent). Surpluses were the source for only 1 percent of leveraged funds. The pattern of uses of substituted funds also tends to refute the surplus-adjusting hypothesis. Fully 59 percent of substituted funds were used for capital expenditures, with almost 13 percent used to offset

FIGURE 2



LOCAL PUBLIC WORKS

Round I

Employment and Disbursements

March 1977 through September 1980

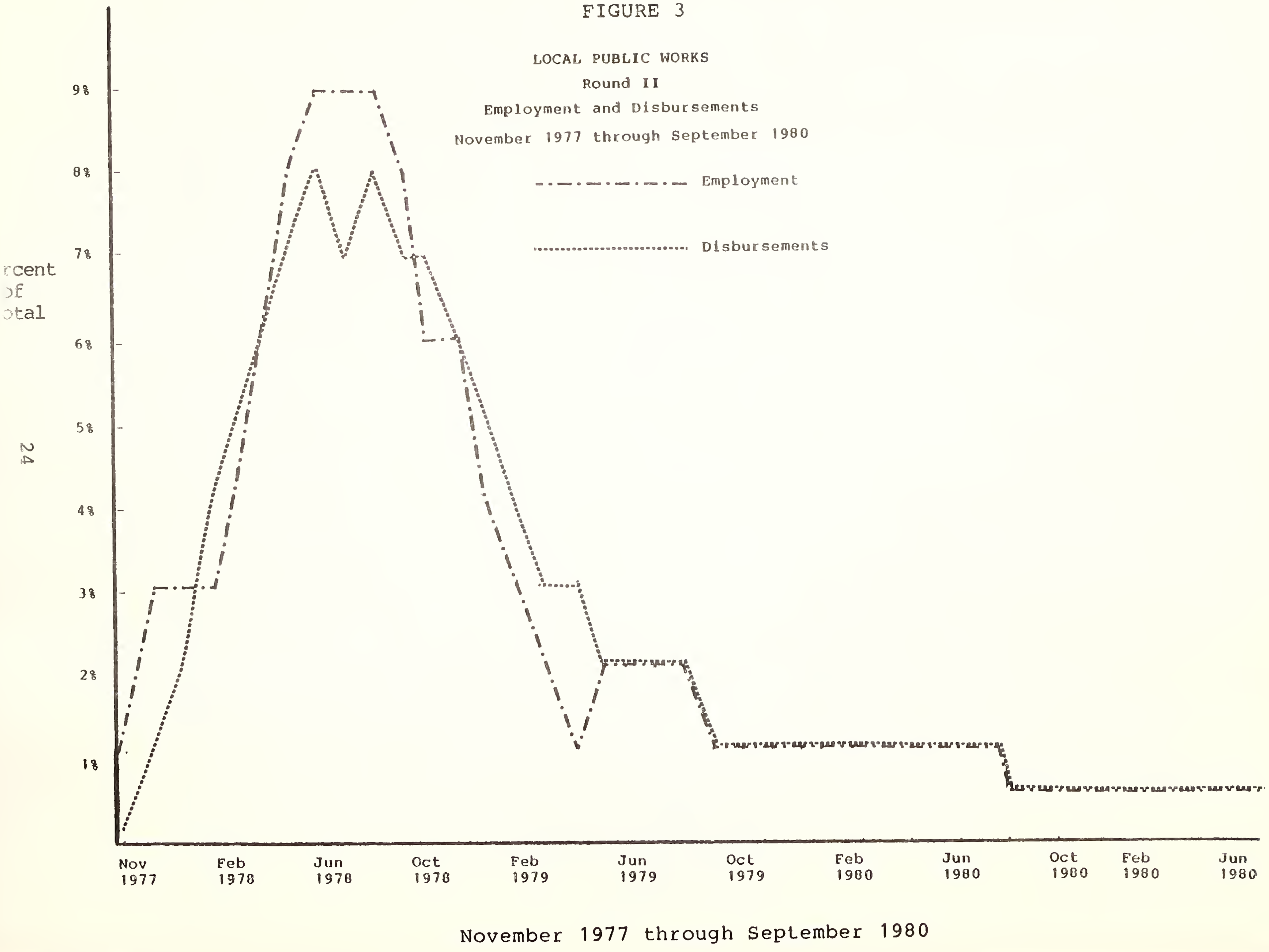
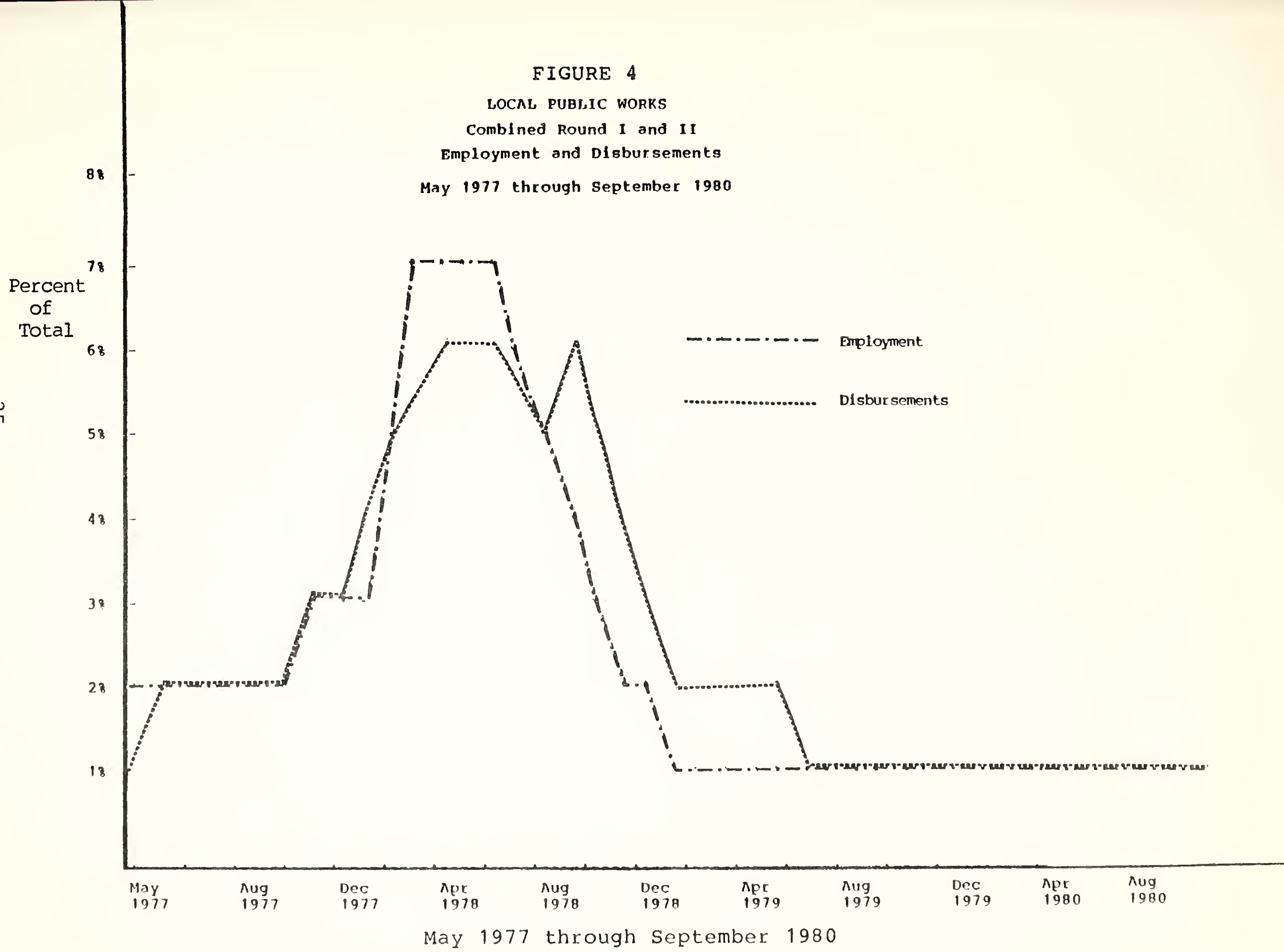


FIGURE 3

LOCAL PUBLIC WORKS
Round II
Employment and Disbursements
November 1977 through September 1980

FIGURE 4

LOCAL PUBLIC WORKS
Combined Round I and II
Employment and Disbursements
May 1977 through September 1980



operating expenses. Only 28 percent was used for debt reduction or the accumulation of surpluses. Thus, the greatest local fiscal relief provided by LPW was to local capital budgets, as opposed to the building up of surpluses or the reduction of debt.

4. Inflationary Impacts

The final factor to be considered in conjunction with LPW's stimulus effects is the inflationary impact of LPW labor and materials demand. On an industry-wide, macroeconomic basis, the inflationary impact was minimal by virtue of the program's relatively small share of total construction spending. During the peak period of combined LPW I and LPW II activity in the second quarter of calendar 1978, monthly program outlays averaged less than 4 percent of the total value of new non-residential construction put in place. Including the residential sector, LPW demand amounted to only 1.8 percent of total construction spending. The sizeable increases in construction costs over the past few years have been attributed by the industry to rising fuel, raw material, transportation, labor and regulatory costs borne by the producers, distributors, and users of construction materials, as well as to escalating costs of construction financing and equipment.

At the local level, the situation was found to be similar, although there appeared to be some inflationary impacts, particularly with regard to materials costs. The analysis of responses from the general contractors, subcontractors and suppliers surveyed by Abt Associates, Inc. clearly indicates that there were very few shortages of either labor or materials, in spite of the fact that the bulk of the LPW expenditures occurred during a time of substantial construction activity. Less than 2 percent of the contractor sample indicated that they had difficulty hiring labor due to a general labor shortage. Some 10 percent of the general and subcontractors interviewed indicated that they had had difficulty obtaining materials. About 20 percent of those who reported difficulty cited cement (the most frequently purchased material) as being in short supply; this is not surprising considering the national shortage of cement in 1977 and 1978. About 5.5 percent of interviewed contractors delayed other work or passed up bids because of the LPW project. Since they were predominantly larger and more successful firms, their over-abundance of work may have opened up opportunities for new and/or smaller contractors.

C. EMPLOYMENT

The second of the three major goals of the LPW Program was to generate employment opportunities, particularly for workers in construction and related industries. To assess LPW's progress in meeting this goal, the following factors were examined:

- the total number of employment opportunities in construction and other industries stimulated by the program;

- the composition, duration and timing of the construction employment generated over the life of the program;
- the factors influencing project cost effectiveness and rates of employment build-up;
- the characteristics of those employed in LPW construction; and
- the net cost per job of the employment created.

1. Employment Generation

Unlike jobs programs which emphasize occupational training or periods of direct public sector employment such as those funded under the Comprehensive Employment and Training Act, public works construction is uniquely suited to the broad diffusion of employment opportunities and income. As a result of the materials demand generated by public facility projects, LPW's greatest employment impact occurred in allied supply industries and through the inducement of increased private sector consumption. Thus, LPW job creation and demand stimulus was channeled through, rather than directed solely at, the construction sector. Accordingly, the program's employment effects must be considered in terms of:

- Direct employment -- "on-site" construction jobs involving skilled and unskilled construction workers, as well as administrative, clerical, and service workers employed by project construction contractors and subcontractors;
- Indirect employment -- jobs in supply industries that produce, market, and/or service project equipment and materials; and
- Induced employment -- private sector jobs that result from increased goods and services consumed by LPW project workers, construction contractors, and materials suppliers.

A central component of EDA's evaluation of LPW employment impacts has been the monitoring of on-site payroll data for separate samples encompassing 10 percent of the projects approved in both Round I and Round II of the program. Data for these 1,062 projects, including employee counts, hours, and wages, were reported to EDA on the LPW Payroll Reporting Form (ED-746) by construction contractors and subcontractors working on sample projects for the duration of on-site work.

Samples comprising 10 percent of the projects funded in each round were large enough to permit stratification of the sample projects according to grant size, construction activity, and functional category, as well as EDA region and urban-rural mix.

a. Total Employment

Based on actual direct employment data and employment multipliers, it is projected that LPW I and LPW II, through their 10,616 projects, generated between 343,000 and 371,000 person-years of total employment*. As shown in Table 4, this included an estimated 93,000 person-years of on-site (direct) employment. In addition to direct employment, LPW generated jobs in supply industries (indirect jobs) and industries affected by increased private sector consumption (induced jobs). It is estimated that the indirect jobs totalled approximately 66,000 person-years, while induced jobs accounted for between 184,000 and 212,000 person-years of LPW employment.

These employment estimates represent gross employment projections based on sample data reported since the start of LPW project construction in December 1976. They are expressed in gross terms and thus do not reflect the fiscal substitution or "crowding out" effects of the program, i.e., the extent to which LPW project funding replaced or displaced planned public or private construction spending. These effects, however, were revealed to be minimal by the analysis summarized in Section B, which also showed that such effects were negated by the addition of non-LPW funds to help finance LPW projects. Estimates of total employment effects are derived by applying a secondary employment multiplier to the number of direct jobs extrapolated from the payroll reporting sample.**

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* The number of "jobs" created in each of these categories is expressed in terms of full-time equivalent person-years, as opposed to actual numbers of individuals employed. For example, a person-year of direct employment in the construction industry is defined as 1,800 hours of on-site work -- a standard developed by the Bureau of Labor Statistics (BLS) to accommodate the typically short duration of construction project employment.

** The indirect and induced employment multipliers used in this study were derived from an analysis of procedures used by the Rand Corporation (Georges Vernez et al., Regional Cycles and Employment Effects of Public Works Investment, January 1977.) and public works project impact data collected and analyzed in a previous EDA study (Anthony J. Sulvetta and Norman L. Thompson, An Evaluation of the Public Works Impact Program (PWIP), April, 1975.) These analyses indicate that approximately 1.1 person-years of indirect employment are created for each $100,000 expended for construction. In total, 2.7 to 3.0 induced and indirect person-years of employment are generated for each on-site person-year generated.

TABLE 4

TOTAL EMPLOYMENT

	Person-Years of Employment		
	Round I	Round II	Total
Direct Employment	31,407	61,261	92,668
Indirect Employment	21,890	43,835	65,725
Induced Employment	62,909 - 72,331	121,570 - 139,948	184,479 - 212,279
Total Employment	116,206 - 125,628	226,666 - 245,044	342,872 - 370,672

GROSS COST PER JOB GENERATED BY LPW

	Gross Cost Per Person-Year of LPW Employment		
	Round I	Round II	Total
Direct Employment	$63,362	$65,050	$64,477
Direct and Indirect Employment	$37,338	$37,918	$37,723
Direct, Indirect, and Induced Employment	$15,840 - $17,125	$16,262 - $17,581	$16,119 - $17,426

b. Gross Cost per Person-Year

On the basis of LPW grant award amounts, the gross cost of one person-year of employment created in construction and secondary industries -- total employment -- was an estimated $16,119 to $17,426. The cost of a person-year of direct employment in construction was $64,477, while the cost of creating a person-year of employment in construction and supply industries was $37,723. Comparing the gross cost per person-year by round, Round I ranged from $15,840 to $17,125 for a person-year of total employment whereas in Round II the cost of creating a person-year of employment was between $16,262 and $17,581. In direct construction employment a person-year cost $63,362 in Round I and $65,050 in Round II. Net cost figures, which take into account transfer payment savings and taxes paid to Federal, State, and local governments, are presented in Section C.4. below.

c. Cost Effectiveness

Looking at cost effectiveness in terms of the number of person-years of employment per $100,000 expended, LPW generated 1.6 person-years of direct employment per $100,000 of expenditures. Application of the multiplier for secondary employment mentioned earlier, results in an estimated 4.3 to 4.8 person-years per $100,000 expended. These results do not vary across rounds of the program.

d. On-Site Employment and Earnings

LPW employed over one million different persons in construction. Of these employees, 67 percent were skilled workers and 29 percent unskilled workers. The remaining 4 percent were administrative, clerical, and service workers. Looking at the two rounds separately, Table 5 indicates that although the magnitude of employment was significantly greater in Round II than in Round I, there is little difference between Round I and Round II in the distribution of the employment between skilled and unskilled workers.

Administrative and clerical workers represented a greater proportion of the total person-years of employment than the number of persons would suggest. As indicated in Table 5, administrative, clerical and service employees, while accounting for only 4 percent of the LPW work force, accounted for 9 percent of the person-years of employment. The significantly longer average employment duration for administrative, clerical, and service workers -- 297 hours per workers as compared with 138 hours per skilled worker and 142 hours per unskilled worker -- is a function of their continuous, supportive role in the construction of projects.

As Table 5 shows, average employment duration under the LPW Program was 146 hours, or four weeks, for all types of workers. Under LPW I the average was 179 hours, as compared to 134 hours under LPW II. The generally smaller size of the Round II projects

TABLE 5

LPW ON-SITE EMPLOYMENT BY SKILL LEVELS

	Round I	Round II	Total
Number of Projects	2,062	8,554	10,616
Persons Employed	315,678	824,757	1,140,435
Skilled	215,838	547,265	763,103
(Percentage)	(68%)	(66%)	(67%)
Unskilled	88,191	239,015	327,206
(Percentage)	(28%)	(29%)	(29%)
Administrative, Clerical, and Service	11,649	38,477	50,126
(Percentage)	(4%)	(5%)	(4%)
Person-Years of Employment	31,407	61,261	92,668
Skilled	20,225	38,312	58,537
(Percentage)	(64%)	(63%)	(63%)
Unskilled	8,526	17,340	25,866
(Percentage)	(27%)	(28%)	(28%)
Administrative, Clerical, and Service	2,656	5,609	8,265
(Percentage)	(9%)	(9%)	(9%)
Average Employment Durative (hours per worker)	179	134	146
Skilled	169	126	138
Unskilled	174	131	142
Administrative, Clerical, and Service	410	262	297

is a probable reason for the substantially shorter average employment durations experienced in Round II. Skilled workers were employed an average of 126 hours in Round II, as compared with 169 hours in Round I. The differences betwen rounds for unskilled workers and administrative, clerical and service workers is equally as great.

Total LPW project wages amounted to an estimated $1.6 billion of the $7.16 billion in total expenditures on LPW projects. Using these wage payments to compute a labor intensity (wage payments/total project expenditures) for LPW resulted in an estimated labor intensity of 21.9 percent. Round I exhibited a slightly higher labor intensity of 23.8 percent compared with 21 percent for Round II.

Skilled construction workers received 70 percent of total wage payments, compared with 21 percent for unskilled construction workers and 9 percent for administrative, clerical, and service workers as shown in Table 6. Average earnings received by workers were $1,370, at a average hourly rate of $9.36 including overtime payments. Adjusting for the relatively short duration of on-site construction employment, an average salary of $16,855 is estimated for an 1800-hour person-year of employment.

e. Occupations

Although influenced by factors such as local construction codes, union work rules, climatic conditions, and the use of mechanized alternatives to labor, the amount of direct employment generated through public works is generally determined by the technical requirements of specific project types. These requirements are ultimately reflected in the skill level and occupational composition of the on-site work force.

The on-site employment characteristics of occupations involved in the construction of LPW projects are provided in Table 7. As shown, persons engaged in construction (non-administrative) occupations account for 96 percent of the LPW work force, and account for 91 percent of total on-site person-months generated during the program. The largest single occupational group consists of skilled and unskilled laborers (28 percent of the total persons employed). Specific construction trades (excluding laborers and drivers) represent 58.8 percent of the persons employed and 52.4 percent of person-months worked.

Average employment durations vary considerably among construction occupations, ranging from a low of 82 hours per worker for other construction occupations (such as roofers and welders) to a high of 227 hours for carpenters. As indicated previously, the average duration of employment for all LPW construction workers amounts to 146 hours. There were no significant variations in the occupational mix between LPW I and LPW II.

TABLE 6

TOTAL LPW WAGE PAYMENTS AND AVERAGE EARNINGS BY WORKER CATEGORY

	Round I	Round II	Total
Wage Payments ($000)	$512,720	$1,049,221	$1,561,941
Skilled	364,851	723,203	1,088,054
(Percentage)	(71%)	(69%)	(70%)
Unskilled	104,787	228,740	333,527
(Percentage)	(21%)	(22%)	(21%)
Administrative, Clerical, and Service	43,083	97,278	140,360
(Percentage)	(8%)	(9%)	(9%)
Cumulative Average Earnings			
Skilled			
Per Worker	1,690	1,321	1,426
Per Hour	10.02	10.49	10.33
Per Person-Year	18,040	18,877	18,587
Unskilled			
Per Worker	1,188	957	1,019
Per Hour	6.83	7.33	7.16
Per Person-Year	12,290	13,191	12,894
Administrative, Clerical, and Service			
Per Worker	3,698	2,528	2,800
Per Hour	9.01	9.64	9.43
Per Person-Year	16,220	17,343	16,982
Total			
Per Worker	1,624	1,272	1,370
Per Hour	9.07	9.52	9.36
Per Person-Year	16,325	17,127	16,855

TABLE 7

PERCENTAGES OF ROUND I AND ROUND II WORKERS AND PERSON-MONTHS BY OCCUPATION WITH RELATED AVERAGE EMPLOYMENT DURATIONS

Occupational Classification (And Percent Skilled)	Percent of Persons Employed	Percent of Person-Months	Average Employment Duration (hrs. per worker)
Bricklayers (76)	5%	5%	149
Carpenters (91)	9	14	227
Cement and Concrete Workers (88)	4	3	96
Electricians (89)	6	7	200
Laborers (27)	28	30	153
Operating Engineers (97)	9	9	151
Painters and Paperhangers (92)	3	2	113
Plumbers and Pipefitters (89)	5	6	173
Other Construction Occupations (86)	27	15	82
Administrative or Other Occupations (98)	4	9	305
Total (71)	100%	100%	146

f. Employment Build-Up Patterns

Employment build-up patterns, which were discussed in the section on "Program Timing" and reflected in Figures 2, 3, and 4, as well as Figure 5 on the following page, represent the person-months of full-time equivalent employment generated on-site in each successive month of project construction. In addition to providing a general indication of the timing of direct job creation, the employment build-up patterns reveal both immediate construction sector impacts and the peak period of on-site employment generation. The employment build-up patterns exhibited by Rounds I and II are presented in Table 8.

The build-up of Round I on-site employment accelerated in the spring of 1977, coinciding with the expiration of mandatory 90-day deadlines for the start of on-site labor and with the beginning of the spring construction season. The number of direct person-months generated doubled between April and May 1977 alone, and increased steadily thereafter to a Round I peak in August 1977. The greatest monthly employment generation occurred in the months of July and August of 1977, with each of these months accounting for approximately 7.5 percent of total Round I person-months created. Fully 91 percent of cumulative direct employment was generated during the first two years of Round I ending December, 1978, as opposed to only 5 percent in the following year. Calendar year 1977 accounted for 54.2 percent of Round I direct job creation, with calendar years 1978, 1979, and 1980, accounting for 36.8 percent, 5.2 percent, and 3.8 percent, respectively.

Initial employment build-up occurred more slowly in Round II after full-scale construction began in the late fall of 1977. The adverse climatic conditions in the ensuing winter months of 1978 restricted employment generated through March 1978 to 15.7 percent of total person-months created by Round II projects. The level of on-site employment generation rose dramatically in the spring of 1978 and remained strong through the peak construction season ending in October 1978. More than 54 percent of the total direct employment was generated in those seven months alone. By the end of calendar year 1978, over 73 percent of total person-months had been generated. Between January and December 1979, during which 14.9 percent of total employment was generated, monthly percentages of total person-months gradually fell to 0.6 percent by December, the lowest level since November 1977. This was due to the completion of most of the Round II projects and the arrival of winter.

Employment build-ups for skilled and unskilled construction labor categories generally reflected those of the total work forces in Rounds I and II (see figures in Appendix A). However, individual patterns for skilled and unskilled labor did differ to some extent as a result of the phasing of project construction and seasonal effects. For example, monthly unskilled employment for Round I peaked as early as June 1977, compared with September 1977 for skilled construction employment. Likewise, the seasonal decline

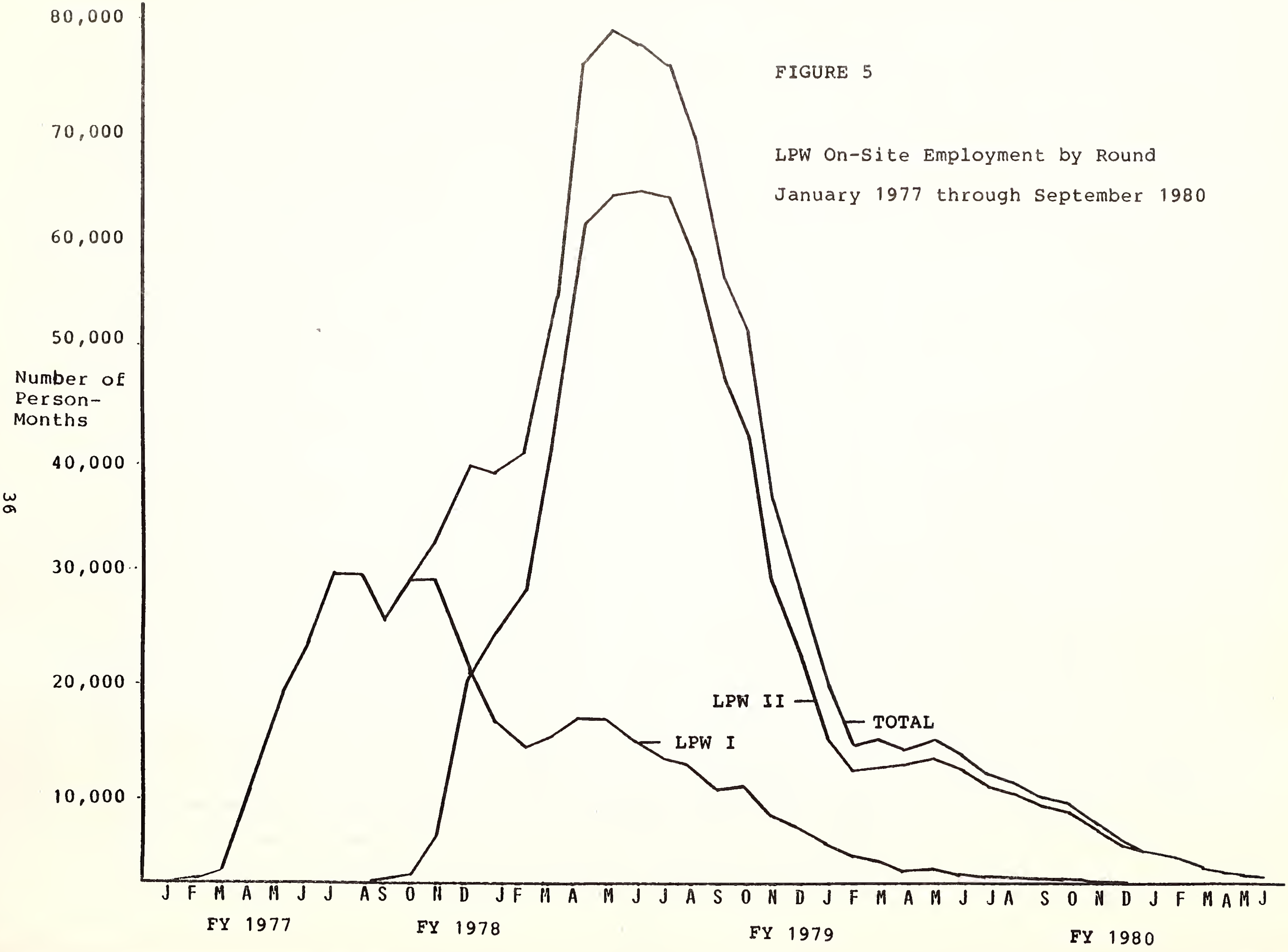

FIGURE 5

LPW On-Site Employment by Round

January 1977 through September 1980

TABLE 8

Monthly LPW Construction Employment

	LPW I		LPW II	
	Number of Person-Months	Percent of Total Person-Months	Number of Person-Months	Percent of Total Person-Months
1977				
January	39.3	*	0	0
February	49.6	*	0	0
March	1,127.7	0.3%	0	0
April	8,882.3	2.4	0	0
May	17,634.1	4.7	0	0
June	22,877.5	6.1	0	0
July	28,283.8	7.5	0	0
August	28,287.0	7.5	160.5	*
September	24,646.9	6.5	187.7	*
October	27,806.7	7.4	590.9	0.1%
November	27,806.7	6.4	4,242.5	0.6
December	20,489.4	5.4	18,347.2	2.5
Calendar Year 1977	204,194.6	54.2%	23,528.8	3.2%
1978				
January	15,050.0	4.0%	23,433.4	3.2%
February	12,770.7	3.4	27,241.4	3.7
March	13,794.8	3.7	40,900.1	5.6
April	15,317.1	4.1	60,687.6	8.3
May	15,268.0	4.0	63,403.5	8.6
June	13,256.2	3.5	63,966.3	8.7
July	12,094.3	3.2	63,528.5	8.6
August	11,309.7	3.0	57,637.1	7.8
September	8,741.5	2.3	47,324.0	6.4
October	9,310.2	2.5	41,710.1	5.7
November	6,404.3	1.7	28,715.0	3.9
December	5,314.1	1.4	21,527.9	2.9
Calendar Year 1978	138,630.9	36.8%	540,074.9	73.4%

* - Less than one-tenth of one percent.

TABLE 8 (Continued)

Monthly LPW Construction Employment

	LPW I		LPW II	
	Number of Person-Months	Percent of Total Person-Months	Number of Person-Months	Percent of Total Person-Months
1979				
January	4,173.7	1.1%	13,782.7	1.9%
February	2,954.5	0.8	10,428.3	1.4
March	2,512.5	0.7	11,189.4	1.5
April	1,431.6	0.4	11,273.5	1.5
May	1,897.5	0.5	11,776.1	1.6
June	1,217.3	0.3	10,836.8	1.5
July	1,177.1	0.3	9,215.1	1.2
August	1,186.1	0.3	8,219.4	1.1
September	1,056.2	0.3	7,094.3	1.0
October	780.2	0.2	6,641.9	0.9
November	655.7	0.2	5,042.1	0.7
December	481.7	0.1	4,229.4	0.6
Calendar Year 1979	19,524.1	5.2%	109,729.0	14.9%
1980				
January	207.7	*	2,970.0	0.4%
February	109.3	*	2,577.1	0.4
March	2.1	*	2,304.0	0.3
Projected - Balance of 1980	14,215.3	3.8%	53,948.2	7.3
Calendar Year 1980	14,534.4	3.8%	61,799.3	8.4%
Fiscal Year 1977	131,828.2	35.0%	348.2	*
Fiscal Year 1978	189,968.7	50.4%	471,302.5	64.1%
Fiscal Year 1979	38,635.1	10.2%	185,768.6	25.3%
Fiscal Year 1980	16,452.0	4.4%	77,712.7	10.6%
Total Period	376,884.0	100.0%	735,132.0	100.0%

* - Less than one-tenth of one percent.

that affected both skilled and unskilled employment after October 1977 had a greater impact on the unskilled. In Round II, unskilled construction leveled off starting in February 1978, while skilled construction employment continued to increase until May of that year. Both skilled and unskilled construction employment declined rapidly after June 1978.

2. Factors Influencing Project Cost-Effectiveness and Build-Up Rates

In an effort to identify which types of projects were most effective in generating on-site employment quickly, the evaluation included an analysis of the factors that influenced the relative performance of five distinct infrastructure categories.* However, cost-effectiveness was found to be influenced to a greater degree by project cost and construction activity (i.e., new construction versus renovation) than by project type.

The principal factor affecting the immediate employment impacts of project types (i.e., the percentages of total on-site hours generated in the initial months of construction) was the seasonal timing of construction start-up. Regardless of the type or size of projects, construction timed to coincide with the peak construction season (June through September) accelerated direct employment generation. To illustrate, the proximity of mandatory deadlines for the initiation of on-site labor to the start of the annual construction season generally expedited initial employment build-up in Round I, which led to a concentrated direct impact during the summer and fall of 1977. Conversely, labor deadlines occurring after the peak season delayed the overall rate of employment generation in Round II during the initial months of on-site construction (October 1977 through March 1978). Seasonal employment fluctuations were most pronounced among Roadways projects. The percentage of direct employment created in the first six months of on-site activity (by project type and round) is presented in Figure 6.

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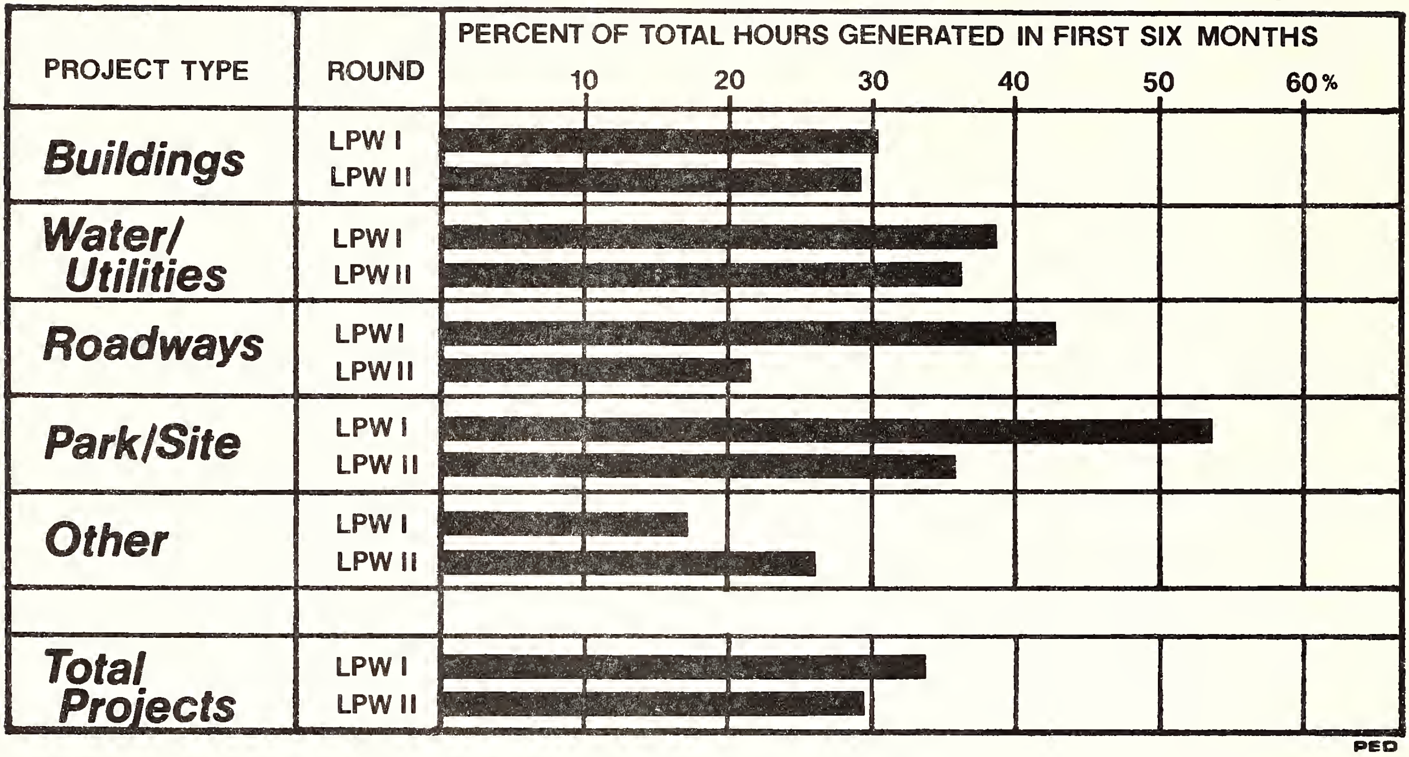
* The broad infrastructure categories, or project types, defined for the analysis grouped LPW projects according to a common structural or physical property. This method of classification produced the following five categories:

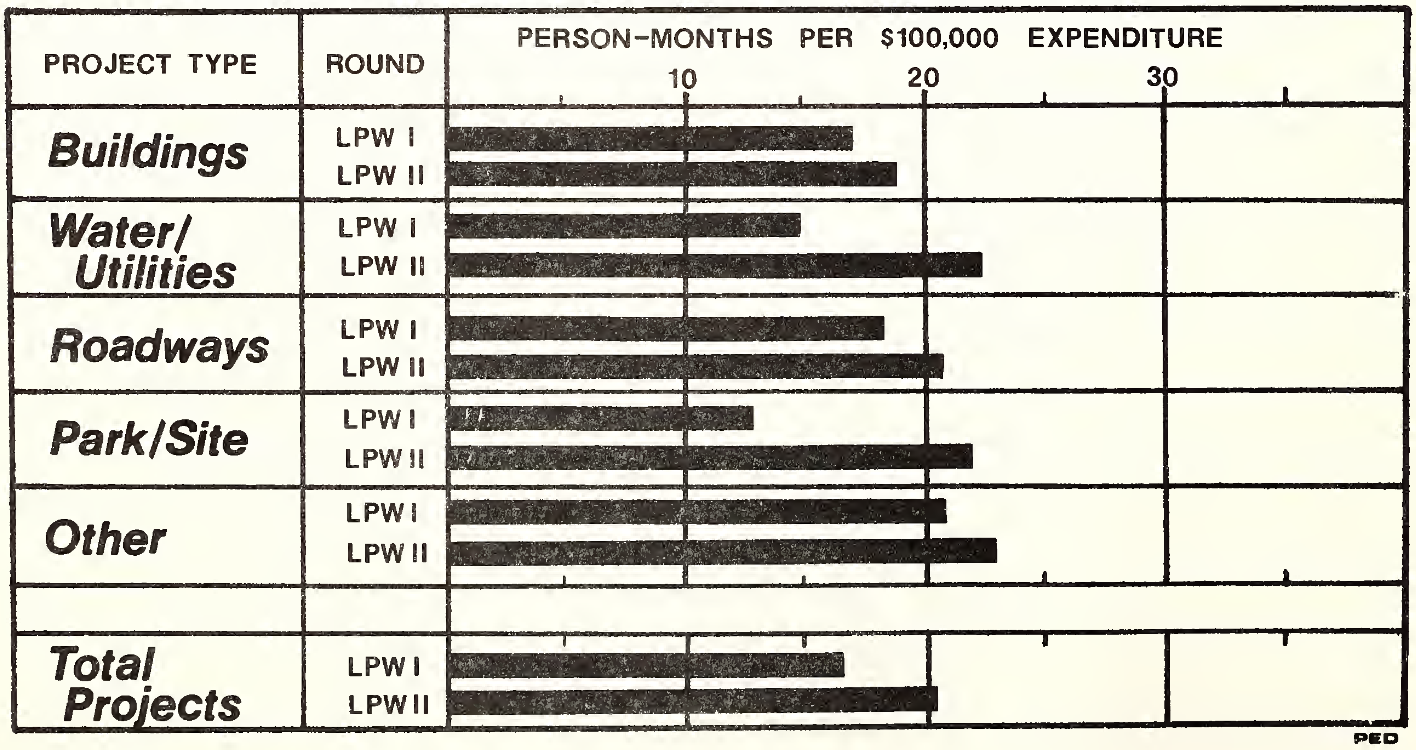
1. Buildings
   (LPW I - $1,170 million)(LPW II - $2,185 million);
2. Water, Sewer, and Other Utilities
   (LPW I - $423 million)(LPW II - $758 million);
3. Roadways and Related Improvements
   (LPW I - $253 million)(LPW II - $689 million);
4. Park, Commercial, and Other Site Development
   (LPW I - $95 million)(LPW II - $232 million);
5. Combined or Other Structures
   (LPW I - $49 million)(LPW II - $142 million).

FIGURE 6

Percent of Direct Employment Created in the First Six Months of On-Site Activity



Direct Person-Months Created Per $100,000 Expenditure



Not surprisingly, the cost effectiveness of on-site employment generation was primarily determined by the average hourly wage rate. Differences by project type and round in the number of direct person-months of employment created per $100,000 expenditure are also shown in Figure 6. A direct trade-off was found to exist within each project type between higher wage rates and direct employment generation.

Generally, projects costing under $1.0 million generated considerably more direct employment per dollar of expenditure than larger-scale projects. Rehabilitation or repair activities were particularly cost-effective among projects costing less than $500,000. Only Roadways projects were relatively cost-effective at costs of $3 million or more. In addition, smaller projects generate a larger proportion of their employment within the first six months of on-site activity.

In addition to the more obvious implications of seasonal timing and project size, other factors which influenced the rate of initial employment generation included:

- project phasing: project types and construction activities which demonstrated the greatest differentiation in required crafts and direct labor hours at successive stages of construction had generally slower initial build-up rates; and

- metropolitan (SMSA) or non-metropolitan (non-SMSA) project location: the greater availability and accessibility of construction labor, materials, and supplies in economically integrated metropolitan areas, as opposed to more remote geographic locations, tended to promote faster rates of initial employment build-up on Buildings projects, as well as on Water/Utilities and Park/Site projects costing $1 million or more.

Among LPW project types, greater cost effectiveness implied greater labor intensity (i.e., a larger ratio of wages to total project expenditures). However, as revealed in Figure 6, greater cost effectiveness did not necessarily coincide with a more rapid build-up of on-site employment. Only Roadways projects started in the spring of 1977 (LPW I) and Water/Utilities projects averaging less than $500,000 in approved total cost (LPW II) were both relatively cost-effective and timely in terms of generating direct employment. Generally lower labor intensity among large scale projects appears to have been the primary cause of the trade-offs between cost effectiveness and immediate impact that occurred among non-Roadways projects in Round I. In Round II, however, the off-season start of project construction, which slowed initial employment build-up, was largely responsible for the trade-offs that affected project types other than Water/Utilities.

Each project-type category was considerably more cost-effective in LPW II, following sizeable reductions in the average total cost of projects and increased funding of Rehabilitation activities. Despite greater labor intensity and employment generating capacity, project types in the second round were generally slower to create direct employment in the initial six months of construction. As noted earlier, the delayed build-up of LPW II employment is attributable to construction starts in traditionally "off-season" months, i.e., late fall 1977.

3. Employee Characteristics

a. Basic Personal Characteristics

In addition to estimating the magnitude and timing of employment opportunities created by the LPW Program, the evaluation results also present a detailed picture of the characteristics of those employed on the projects. The LPW labor force appears to have shared many of the basic characteristics of the construction labor force at large. As illustrated in Table 9, employment on LPW projects was generally consistent with employment in the construction trades, with a very strong representation of white males from ages 25 to 44. However, the data also points to certain divergences between the characteristics of the LPW work force and those of the industry work force at large.

An examination of the racial characteristics of LPW employees reveals that the program had a substantial impact on minorities. As indicated in Table 9, the broadly defined category of black and other minority groups represents 22.5 percent of the LPW labor force, or 13 percentage points above its representation in the construction labor force at large. This finding takes on added significance when one considers that the representation of minorities in LPW exceeded their disproportionate share (16.1 percent) among unemployed construction workers.

In contrast to its impact on minorities, the LPW Program seems to have provided employment for fewer women than would be expected given the construction labor market of 1978. The disparity (0.9 percent for LPW versus 6.8 percent industry) is, in large part, attributable to the fact that the high concentration of women in clerical occupations was not captured in the employee sample because it was found that these administrative support jobs were not dependent on LPW funding. With dependence determined usually by the amount of time the employee spent on LPW-related work, most clerical jobs "fell out" of the sample, taking with them the majority of female employees. However, focusing only on the women who would have been expected to benefit from the increase in construction labor demand resulting from LPW (i.e., those employed in on-site construction activities) reveals significantly less discrepancy.

TABLE 9

COMPARISON OF LPW LABOR FORCE WITH CONSTRUCTION LABOR FORCE AT LARGE BY BASIC EMPLOYEE CHARACTERISTICS

Basic Employee Characteristics	LPW Labor Force	Construction Labor Force*	Unemployed Construction Labor Force*
Sex			
Male	99.1%	93.2%	94.6%
Female	0.9	6.8**	5.4
Age			
16-19	4.1	7.2	--
20-24	15.2	16.9	--
25-44	51.6	46.2	--
45-59	25.1	23.9	--
60+	4.1	5.7	--
Race			
White	77.5	90.5	83.9
Black and Other	22.5	9.5	16.1

* - Source: The Bureau of the Census, Current Population Survey, 1978.

** - LPW Labor Force data include primarily those employed in on-site construction, with very few administrative or clerical support jobs. Of the 6.8 percent women in the Construction Labor Force, only 1.7 percent were engaged in on-site construction.

These women, usually in skilled craft occupations, make up roughly 1.7 percent of the construction labor force, as compared to 0.9 percent of the LPW labor force. Thus, from what is a more realistic comparison, it is evident that although women received a disproportionately small share of the employment benefits resulting from LPW, they were less under-represented than suggested by the aggregate figures.

Both seasonal and cyclical fluctuations in labor demand affect a large proportion of the construction labor force, and in 1978, an average of nearly 10 percent of the construction labor force was unemployed. By contrast, 13 percent of LPW employees were jobless prior to finding work on a program project. Conversely, there appears to have been a smaller proportion of long-term unemployed (persons unemployed for 27 or more weeks) in the LPW labor force (0.7 percent) than in the construction labor force of 1978 (8.9 percent).

An occupational breakdown of the LPW labor force provides some interesting insights into the types of workers who benefited from the LPW program. Table 10 presents a comparison of the LPW labor force with the construction labor force at large by occupation. As indicated, there is a notable difference in the "white collar" occupations of professional, managerial and administrative, and clerical occupations, with the LPW labor force below the industry norm in all three categories. Furthermore, differences exist in the laborer category, with LPW showing a much stronger representation of laborers than was found in the construction labor force.

b. Socioeconomic Characteristics of LPW Employees

The economic status of LPW employees, as measured in terms of income in 1977, the frequency and duration of unemployment in 1977, and employment status immediately before LPW hire, was analyzed relative to the basic personal characteristics described above. In this analysis it was found that prior to LPW:

- Blacks and other minorities represented in the LPW program had experienced greater difficulty finding work and remaining employed.

- Women in on-site construction occupations had been unemployed in 1977 with greater frequency and for longer durations than men. Moreover, nearly 32 percent of these women had been unemployed prior to being hired by LPW contractors, while over 12 percent of all men had been jobless before LPW hire. As a consequence, the distribution of 1977 income earned by women in on-site construction occupations displays a skew in the direction of the lower income ranges.

TABLE 10

COMPARISON OF PRIMARY LABOR FORCE OCCUPATIONS WITH CONSTRUCTION LABOR FORCE OCCUPATIONS

Occupation	LPW Labor Force	Construction Labor Force
Professional	1.7%	2.8%
Managerial and Administrative	7.0	11.8
Clerical	0.3	7.1
Crafts and Kindred	49.6	55.3
Driver or Equipment Operator	14.2	7.7
Laborer	25.8	14.8
Other	1.3	0.5

- The duration of unemployment and income of LPW employees had followed a pattern with age which suggested that only the youngest construction labor force members (under 24 years) had encountered unusual problems finding work and remaining employed.

- Employees in the 24 or younger age group had earned incomes in 1977 which were considerably below industry norms. The data show that as labor attachments and experience increased along with age, so also did personal income from construction.

- Veterans in the LPW labor force had fared slightly better than did non-veterans in the construction labor markets of 1977.

c. Wages and Earnings Analysis of LPW Labor Force

Through the Davis-Bacon requirement, the LPW program was intended to create job opportunities for members of the construction labor force that paid wages equivalent to wages paid for similar work in private construction. For this reason, all LPW contractors were instructed to pay prevailing wages for work performed on the LPW project by contractor employees. From data gathered in the survey of LPW employees, it is evident that the application of Davis-Bacon wage regulations on LPW contractors had the effect of raising average wages in every major occupation represented in the program labor force.

The average LPW wage was higher than the usual wage in every occupation where a significant differential was observed. Moreover, the same pattern exists between the previous and LPW wages. Although the effects of Davis-Bacon are largely responsible for the higher LPW wages, this difference is also attributable to job shifting, i.e., to the shifting back into construction of some workers who were employed outside construction on their last job before LPW.

The results of a regional analysis of LPW wages and earnings are closely related to the concentration of "non-union shop" states in the southeastern and southwestern regions of the United States (where a lower than average wage prevailed in all occupations), and to the urban (and urbanizing) influences of the East, Midwest, Rocky Mountain, and West (where higher than average LPW wages prevailed).

d. Characteristics of Workers Employed by Minority Contractors

The results of the survey indicate that 18.3 percent of the LPW fall 1978 labor force was in the employ of minority contractors. A comparison of the characteristics of minority contractor employees with those of non-minority contractor employees revealed a considerably greater representation of blacks and other minorities among minority contractor employees. Moreover, a detailed breakdown of the racial and ethnic origins of minorities indicated a stronger showing of every minority group in the minority contractor labor force.

e. Urban/Rural Analysis of LPW Employee Characteristics

The results of the LPW survey indicate that, in the fall of 1978, projects in urban areas (those located in Standard Metropolitan Statistical Areas or SMSAs) accounted for 58.1 percent of LPW employment, while projects in rural (non-SMSA) areas accounted for 41.9 percent of total employment. These proportions are somewhat different from the proportions of total LPW funds allocated to urban and rural areas (68 and 32 percent respectively). The discrepancy between program funding and employee representation in urban and rural areas can be attributed to a higher rate of completions among projects in urban areas by the fall of the construction season; as a result, these projects were not within the scope of the survey.

A comparison of the basic characteristics of LPW employees who worked on urban projects and of those who worked on rural projects revealed that:

- Urban projects employed a greater proportion of Blacks and other minorities than did projects located in rural areas.
- LPW workers on urban projects had higher incomes than did employees on rural projects. This finding is consistent with the strong union presence which has historically maintained the incomes of urban construction workers above those of construction workers in rural areas.
- There was virtually no difference in the employment status immediately prior to LPW hire, and workers on urban projects appeared to have experienced only slightly longer and more frequent periods of unemployment in 1977 than did workers on rural projects.

f. Occupational Analysis of LPW Labor Force

In general, LPW employees exhibited considerable experience in construction employment and considered construction to be their major field of work. Nearly 77 percent of the LPW labor force was employed in the construction industry, both in their usual and previous jobs. Of the roughly 23 percent who displayed some pattern of industrial mobility, more than half had usual jobs in construction. Only the remaining 11 percent came to their LPW jobs from a usual job in some non-construction industry. When the previously unemployed LPW workers are removed from the analysis, the incidence of industrial shifting goes down considerably. Apparently, the shift by construction workers to some non-construction job in the previous job was strongly related to the difficulty they experienced in finding work during the period before LPW hire.

Roughly 74 percent of all LPW employees worked in one occupation on their usual, previous, and LPW jobs. Of the remaining 26 percent who displayed some pattern of occupational mobility, only about seven percent worked in occupations which were different from their usual occupations.

As might be expected, the great majority of all industrial mobility displayed by LPW workers represents movement into the construction industry. The survey results indicate a low degree of industrial mobility among LPW workers who usually worked in construction. In many cases when the employee had a job outside his major field of work before LPW hire, the program job provided a bridge back to his usual occupation. Among workers who usually worked outside the construction industry, however, the incidence of industrial mobility was considerably higher. It must be emphasized that in the occupations which account for the majority of construction employment (Managerial and Administrative, Crafts and Kindred, and Driver and Equipment Operator), very little job shifting was observed.

g. Incidence and Effects of Union Membership Among LPW Employees

The LPW labor force displayed a 54.6 percent rate of union membership, which is slightly lower than the industry average of 60 percent for on-site construction occupations. The study found that workers with usual jobs in construction had a higher rate of union membership (57.3 percent) than did workers who came to the LPW job from a non-construction industry (22.6 percent). Owing to the strong identification of union members with their union trade or occupations, and the rules within most labor unions prohibiting members from working outside their union trade, it was expected that both occupational and industrial mobility would be lower among union members.

These expectations were confirmed in a comparison of job shifting patterns of union and non-union workers in the LPW program. In fact, fully 83 percent of union workers displayed no industrial mobility, as compared to approximately 70 percent of all non-union workers and 77 percent of the program labor force as a whole. The same strong pattern of non-mobility among union workers is found to exist within the major occupations represented in the LPW labor force. Nearly 80 percent of all union workers displayed no occupational mobility, as opposed to roughly 67 percent of non-union workers and to 74 percent of the LPW labor force as a whole.

h. Analysis of Workers Who Had Concluded LPW Employment

Workers whose LPW employment had terminated prior to the survey made up a large proportion of the LPW sample due to the timing of the survey late in the construction season. These workers displayed characteristics which were much like those of workers who were still employed at the LPW project site in the fall of 1978. The analysis revealed that the duration of LPW employment averaged 2.6 months, with only minor variation explained by most of the basic characteristics of LPW workers (e.g., age, race, and sex).

The data gathered on post-LPW employment permitted an extension of the analysis of job shifting as a result of the addition of information on the post-LPW job. The findings indicate that the LPW job fit into some pre-existing pattern of employment and industrial mobility. For workers with an unbroken history of construction employment, the LPW program provided continuity (74 percent of the workforce). For construction workers who had displayed some pattern of mobility before LPW hire (23 percent), the LPW job provided a point of re-entrance into the construction industry. However, a considerable proportion (14.4 percent) of these employees shifted to a non-construction industry on the post-LPW job. Finally, workers who displayed desultory shifting among industries prior to the LPW job went into some non-construction industry job or became unemployed after the LPW job.

i. Geographic Mobility of the LPW Labor Force

The results of the analysis of geographic mobility indicated that LPW workers travelled an average of 34 miles from their usual residences to the project site, with considerable variation around this program average. Workers who were employed on projects located in urban areas travelled an average of 24 miles to the project site, while workers on rural projects travelled an average of 49 miles. Moreover, nearly 56 percent of all workers on rural projects were not residents of project areas, as compared with 20.9 percent for workers on urban projects. These observations suggest two flows of construction labor under LPW:

- a rather strong movement of urban labor (which accounts for a vast majority of all skilled construction labor) to rural projects and a somewhat weaker reverse flow of rural workers to urban projects; and
- a strong movement of workers in rural areas to projects in other rural areas.

4. Net Cost of LPW

To determine the net cost of creating construction industry (direct and indirect) jobs under LPW, consideration was given to tax returns and savings in transfer payments from gross project expenditures. These savings and returns include Federal, state, and local taxes on personal and corporate income, sales and excise taxes, and reduced unemployment insurance compensation. An analysis of these factors resulted in the finding that the LPW program had produced total returns and savings of $831.9 million. This effectively reduced the budgetary cost to the Federal government of the LPW Program by $464.4 million (7.8 percent), from $5.975 billion* to just over $5.5 billion. Considering returns to all levels of government, the net cost of LPW was reduced by $831.9 million (13.9 percent), to a total net cost of approximately $5.1 billion.

Considering returns and savings, the budgetary net cost to the Federal government is $14,900 to $16,100 per person-year of total employment, $59,466 per person-year of on-site (direct) employment; and $34,791 per person-year of construction industry (direct and indirect) employment. The net cost to all levels of government is even lower. For all jobs, the public net cost is between $13,900 and $15,000 per person year; for direct jobs, it is $55,500; and for direct and indirect jobs, it is $32,471.

As shown in Table 11, the Federal share of these returns/savings was 56 percent, while the share for state and local governments was 44 percent. The distribution of this reverse flow of funds indicates an additional shifting of revenues from the Federal to state and local governments. Thus, savings and returns attributable to LPW became an additional source of local fiscal relief.

D. INFRASTRUCTURE

The principal characteristic that differentiates the Local Public Works Program from other Federal stimulus programs is the long-term benefits of the infrastructure created. As a result, any analysis of the contributions of LPW must consider the physical structures left behind. In general, projects were chosen (by EDA in Round I and by the grantees in Round II) that would serve basic economic development needs. Almost half of the projects in each round could be categorized as primary economic development projects, including water/sewer/utilities, site development, shell industrial buildings and roadways. Grantees, projecting an average project useful life of approximately 42 years, cited no difference in the expected number of years until the next renovation (23 years) between new construction and rehabilitation/renovation projects. Thus, LPW left a legacy of economic development infrastructure in "new" condition. The infrastructure created with LPW grant awards served the population of every state and territory in the country.

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* This figure reflects $6 billion minus the $25 million used by the Federal Government for program administration. The $25 million is subtracted from the LPW cost because the returns in taxes and transfer payments from that $25 million are not reflected in the total returns and savings figure.

TABLE 11

NET COST OF THE LOCAL PUBLIC WORKS PROGRAM

Measure	Federal Government ($millions)	State/Local Governments ($millions)	Total ($millions)
Tax Returns from Direct Labor Costs	$ 75.6 (49%)	$ 80.3 (51%)	$155.9 (100%)
Unemployment Compensation Savings	3.7 (4%)	78.7 (96%)	82.4 (100%)
Tax Returns from Non-Labor Costs	385.1 (65%)	208.5 (35%)	593.6 (100%)
Total Returns/Savings	464.4 (56%)	367.5 (44%)	831.9 (100%)

Budgetary Cost of LPW to the Federal Government:	$5,510.6
Net Cost of LPW:	$5,143.1

Appendix B presents the geographic distribution of LPW funding and projects, by round, within the contiguous states. These maps show that while the heaviest concentration of program assistance was provided to the populations of the Northeast, Southwest and West, the overall effect of LPW was to distribute funds to every region and state in the United States.

In the analysis that follows, the physical characteristics of the 10,616 LPW projects are considered in terms of their cost, the recipients of the project funds, the type of construction activity and their value in meeting long-term economic, community, cultural, and recreational objectives.

1. Description of Projects Funded

In an investigation of the infrastructure created by LPW, a variety of classifications schemes are possible due to the numerous variables that may identify a project. For this summary, four major classification systems are used, which highlight the salient features of the diverse LPW projects. The first system groups the projects by their function (e.g., primary economic development, community development, etc.), while the second system groups projects by their physical structure, (e.g., school buildings, streets or courthouses). The third system groups projects by the kind of construction activity involved (e.g., new construction, renovation, or demolition), and the fourth system looks at LPW projects in terms of size, grouping them into meaningful cost categories.

In analyzing project functions, four categories were established:

- Primary Economic Development (e.g., utilities, site development, shell industrial buildings, etc.);
- Community Development (e.g., schools, housing, social services, health facilities, etc.);
- Public Services (e.g., police and fire buildings, etc.); and
- Cultural and Recreational (e.g., theaters, gymnasiums, park development, etc.).

As shown in Table 12, projects that met primary economic development needs comprised approximately half of all projects funded in both Rounds. However, under LPW II when grantees selected their priority projects for funding, the percentage of funds going to such projects increased from 43.9 percent in LPW I to 46.6 percent. These projects, which are comparable to those financed under EDA's regular development facilities program, not only provide services to area residents and short-term employment for workers in

TABLE 12

LPW FUNDING BY PROJECT FUNCTION

Project Function	Number of Projects (Percent)		LPW-EDA Funding ($000) (Percent)	
	LPW I	LPW II	LPW I	LPW II
Primary Economic Development	1,022 (49.6%)	4,245 (49.6%)	$ 874,000 (43.9%)	$1,868,000 (46.6%)
Community Development	513 (24.9%)	2,071 (24.2%)	613,000 (30.8%)	1,047,000 (26.2%)
Public Services	426 (20.6%)	1,555 (18.2%)	399,000 (20.1%)	722,000 (18.0%)
Cultural and Recreational	101 (4.9%)	683 (8.0%)	103,000 (5.2%)	369,000 (9.2%)
Total	2,062 (100.0%)	8,554 (100.0%)	$1,989,000 (100.0%)	$4,006,000 (100.0%)

construction and related industries, but also help to stimulate private investment in industrial and commercial development ventures. As quantified in Section D.3. below, such ventures in turn generate long-term employment opportunities.

Another 25 to 30 percent of the project funds under LPW I and II, respectively, financed projects that met community development needs, while approximately 20 percent of the funds in both Rounds supported public service facilities. An interesting change between LPW I and II was the increase in support for cultural and recreational projects under the local priority project selection system under LPW II.

Projects funded under LPW I and LPW II involved the construction or improvement of 46 varieties of public buildings and capital facilities. In Table 13, similar projects are grouped into 12 project type groups displaying the distribution of the 2,062 LPW I and 8,554 LPW II projects and their share of EDA funding from each round. In both rounds of LPW, water, sewer and utility systems were the most frequently funded types of projects and received the largest share of funding. These projects were generally construction of new facilities (55 percent), additions (19 percent), and repair/renovations (18 percent) to pre-existing capital stock.

The average project size, measured in EDA dollars, was about half as large in the second round of funding for LPW than in the first round. In Figure 7, projects in both rounds are examined with respect to their distribution over different cost categories and their mean size. During LPW II, the program-wide project mean was just under one-half million dollars ($468,306), as compared to almost $1 million ($964,675) under LPW I. Furthermore, fully 70 percent of LPW II's 8,554 projects were under one-half million dollars while only 44 percent of LPW I projects were under that amount.

Under both LPW I and II, Park Developments were the smallest projects with average costs of $586,302 and $340,354, respectively. The highest average project costs during LPW I were $1.3 million for educational facilities, specifically new buildings or additions and renovations. Under LPW II, housing projects were the largest projects with a mean of $900,000, although as a group they consumed less than one-half of one percent of EDA monies. Consistent with the overall differences in average project costs between Round I and Round II, the mean for the most popular project type -- water, sewer, and utilities systems -- dropped by 51 percent from $847,093 in LPW I to $413,763 in LPW II.

To examine LPW only in terms of EDA monies would be to present an incomplete picture of project cost. In total, LPW generated over $1 billion in additional capital investment. As shown in Figure 8, the percentage of funds leveraged varied greatly by round, with LPW II accounting for over $996 million and LPW I for over $163 million. Well over half of this leveraged investment was generated by

TABLE 13

TYPES OF LPW PROJECTS

Project Type	Number of Projects		EDA Funding Level ($000)	
	LPW I	LPW II	LPW I	LPW II
Water/Sewer/Utilities	551 (26.7%)	1,991 (23.3%)	$ 466,748 (23.5%)	$ 823,803 (20.6%)
Transportation (e.g., streets and bridges)	361 (17.5%)	1,765 (20.6%)	298,127 (15.0%)	801,202 (20.0%)
Education	329 (16.0%)	1,253 (14.6%)	427,845 (21.5%)	659,991 (16.5%)
General Government Administration (i.e., municipal office buildings)	285 (13.8%)	1,037 (12.1%)	291,660 (14.6%)	465,061 (11.6%)
Cultural and Recreation (e.g., museums and gymnasiums)	95 (4.6%)	640 (7.5%)	91,065 (4.6%)	330,249 (8.2%)
Public Safety (e.g, police and fire stations)	141 (6.9%)	518 (6.0%)	107,694 (5.4%)	256,902 (6.4%)
Miscellaneous Economic/ Community Development (e.g., shell industrial buildings, warehouses)	79 (3.8%)	338 (4.0%)	70,267 (3.5%)	158,966 (4.0%)
Community and Social Service (e.g, community centers)	103 (5.0%)	382 (4.5%)	107,312 (5.4%)	178,108 (4.4%)
Public Health (e.g., hospitals)	50 (2.4%)	203 (2.4%)	60,405 (3.0%)	141,634 (3.5%)
Site Development (e.g, port facilities)	31 (1.5%)	151 (1.8%)	39,103 (2.0%)	83,804 (2.1%)
Park Development	26 (1.3%)	255 (3.0%)	15,244 (0.8%)	86,791 (2.2%)
Housing	11 (0.5%)	21 (0.2%)	13,689 (0.7%)	19,379 (0.5%)
Total	2,062 (100.0%)	8,554 (100.0%)	$1,989,159 (100.0%)	$4,005,890 (100.0%)

FIGURE 7

LPW PROJECTS BY SIZE AND ROUND

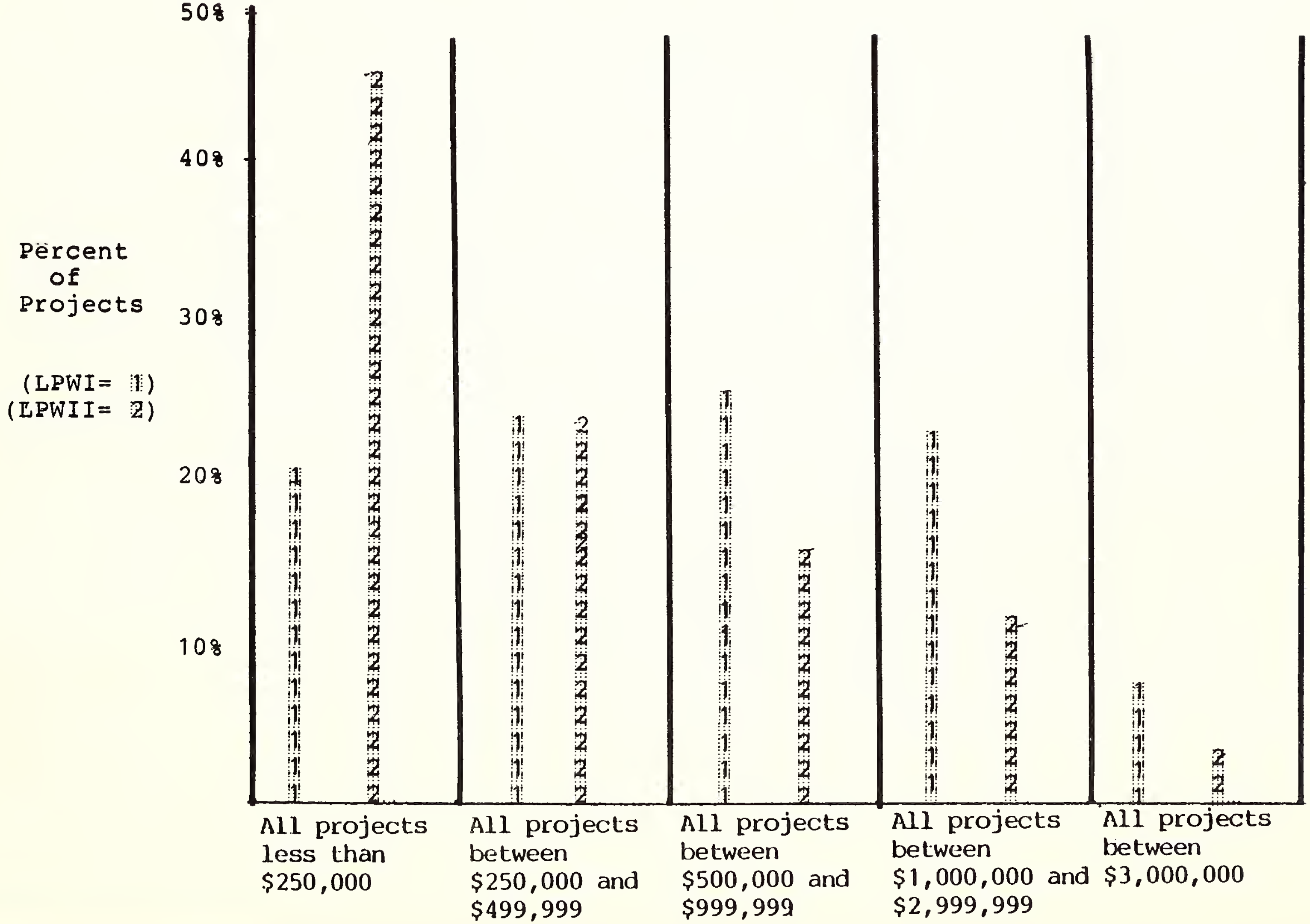
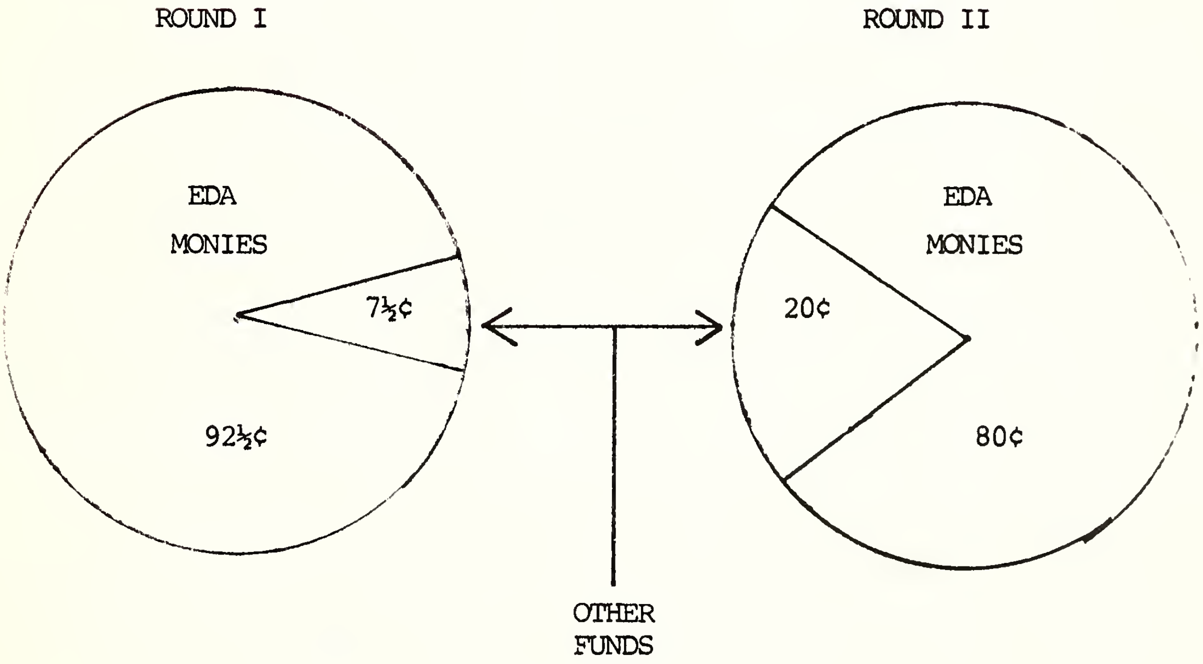


FIGURE 8

COMPOSITION OF AVERAGE LPW PROJECT DOLLAR
(PRODUCTION OF ADDITIONAL INVESTMENT)



projects with total costs of over $3 million. The increased additional funding in the largest cost categories for LPW II is partially attributable to the provision of planning targets for applicant groups and the additional lead time available before LPW II, both of which allowed localities and other applicants to more fully integrate LPW funds with their capital budget plans. Those projects that form the core of economic development -- water, sewer and utility systems -- were financed with more additional non-EDA funding than any other category of project type for both LPW I and II.

In addition to examining project type and size, the evaluation analyzed the major construction activity associated with the LPW projects. In Table 14, the 10,616 LPW projects are presented by construction activity, round and funding. The primary feature of LPW construction activity is that over 60 percent of the total program funds were invested in new construction. Despite the applicant-dominated selection procedures of LPW II, funding among seven different construction activities was highly similar between LPW I and II with two exceptions:

- The percentage of projects involving new construction declined from 72.3 percent in Round I to 61.5 percent in Round II, with a corresponding decrease in funding from 74.7 percent of LPW I to 61.8 percent of LPW II.
- The percentage of rehabilitation and repair projects rose from 15.3 percent in Round I to 24.6 percent in Round II, with funding increasing from 13.3 percent of LPW I to 23.8 percent of LPW II.

2. Types of Grantees

The LPW grantees were generally drawn from six constituent groups: states, counties, cities and towns, school districts, special purpose authorities* and Indian tribes. In Table 15, the types of grantees are presented in terms of their share of projects and funding. The largest, most frequently funded grantee type was cities and towns, which received 59 percent of the funds in LPW I and 60 percent in LPW II.

The participation rates of the various types of grantees increased in LPW II as a result of the allocation of planning targets. While only 15 state governments received funding in LPW I, all 50 received a planning target (representing 8 percent of the total state allocation) in LPW II. The number of county governments receiving project grants increased from 190 in Round I to 901 in Round II, with 78 additional counties using their planning targets to endorse the projects of other applicants within the county area.

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* Special purpose authorities were generally municipal utilities boards, i.e., transportation, water/sewer, or power commissions.

TABLE 14

TYPES OF LPW CONSTRUCTION ACTIVITY

Construction Category	Number of Projects		LPW-EDA Funding ($000)	
	LPW I	LPW II	LPW I	LPW II
New Construction				
New Structures	1,180 (57.2%)	4,023 (47.0%)	$1,229,081 (61.8%)	$1,988,888 (49.6%)
Additions	312 (15.1%)	1,238 (14.5%)	256,803 (12.9%)	488,728 (12.2%)
Rehabilitations and Repairs	316 (15.3%)	2,101 (24.6%)	264,622 (13.3%)	953,038 (23.8%)
Additions and Rehabilitations and Repairs	141 (6.8%)	572 (6.7%)	137,699 (6.9%)	304,047 (7.6%)
Demolitions and New Construction	67 (3.2%)	259 (3.0%)	68,033 (3.4%)	143,212 (3.6%)
Demolitions	1 (0.0%)	11 (0.1%)	30 (0.0%)	4,353 (0.1%)
Miscellaneous Activities	45 (2.2%)	350 (4.1%)	32,891 (1.7%)	123,617 (3.1%)
Total	2,062 (100.0%)*	8,554 (100.0%)	$1,989,159 (100.0%)	$4,005,883 (100.0%)

* - Does not add due to rounding.

TABLE 15

LPW FUNDING BY TYPE OF GRANTEE

Grantee Type	Number of Projects (Percent)		LPW-EDA Funding ($000) (Percent)	
	LPW I	LPW II	LPW I	LPW II
State	122 (6%)	524 (6%)	116,000 (6%)	412,000 (10%)
County	236 (11%)	1,470 (17%)	243,000 (12%)	544,000 (14%)
City/Town	1,301 (63%)	4,984 (58%)	1,168,000 (59%)	2,391,000 (60%)
School District	242 (12%)	1,176 (14%)	324,000 (16%)	499,000 (13%)
Special Purpose Authority	67 (3%)	155 (2%)	65,000 (3%)	58,000 (1%)
Indian Tribe	94 (5%)	245 (3%)	73,000 (4%)	102,000 (2%)
Total	2,062 (100.0%)	8,554 (100.0%)	1,989,000 (100.0%)	4,006,000 (100.0%)

Under LPW II, grantees exhibited different preferences for project types, but all grantee groups except two favored projects that served basic economic development needs: water/sewer/utilities, transportation and site preparation. Only Schools and Indian Tribes presented an alternative mix of projects. As expected, schools districts developed educational facilities, while Indian Tribes favored social and community welfare projects. As indicated above, grantees were more strongly attracted to projects serving cultural and recreation needs under LPW II, and some grantees had stronger preferences for Cultural and Recreational projects than did others. States increased their share of these projects from zero in LPW I to 5.9 percent in LPW II. Overall, the largest users of Cultural and Recreational projects were cities; their share remained constant at 60 percent of these projects for both rounds.

3. Long-Term Impact

While it is still too soon to address fully the long-term impacts of the infrastructure created, several benefits are already evident. Prime among these is LPW's role in bringing existing public infrastructure to "new" condition. Grantees projected an average useful life of approximately 42 years per project. Water and sewer projects had the longest expected useful life (47.3 years), while streets and highway projects had the shortest (33.4 years). Projects involving new construction had a longer expected life (45.7 years) than did repair and rehabilitation projects (37.9). It is notable that there is no significant difference in the average number of years until the next renovation (approximately 23) for these two types of construction activity. Apparently, repair and renovation projects, more prevalent in LPW II, brought the public infrastructure up to "new" condition.

Additional insight into long-term local benefits and costs was provided through a survey of local government officials. Expected fiscal implications of LPW projects were examined for a sample of 140 projects to determine increases in operating and maintenance costs, as well as possible revenue sources. Net revenue for this sample amounted to $19,791,226. This is somewhat misleading, as one auditorium project in Florida expects revenues of over $20,000,000. Excluding this project, the findings revealed that the projects examined would result in a net cost to the governments involved of $278,774, or $2,006 per project.

Another long-term benefit of the LPW Program involves the many permanent employment opportunities generated as a result of private sector investments stimulated by LPW projects. As noted above, almost half of all LPW funds went to support water and sewer systems and other development facilities comparable to those funded under

EDA's regular program. Since the creation of long-term employment opportunities was not an objective of the LPW Program, the evaluation did not attempt to determine the extent to which such impacts occurred. However, a general estimate can be obtained under the assumption that the cost of generating such opportunities is the same for LPW economic development projects as for EDA's regular public works projects (i.e., $13,500 per job). Using this approach, it can be estimated that new construction of LPW economic development projects, which accounted for $1.69 billion in LPW funds, will generate an additional 125,000 person-years of permanent private sector employment.

E. MBE AND OTHER SPECIAL IMPACTS

The accomplishments of Round II of the Local Public Works Program in meeting two of its secondary goals -- the provision of employment opportunities for disabled and Vietnam-era veterans, and the 10 percent Minority Business Enterprise requirement -- are considered in the following section. Since the LPW II legislation stipulated that preferential hiring treatment be accorded qualified disabled veterans and qualified Vietnam-era veterans, data was collected on the extent to which such individuals were employed on LPW projects. The timing of the LPW employee survey late in the construction season of 1978 resulted in a disproportionately low representation of workers employed on LPW I projects, thus prohibiting comparisons of the LPW employee characteristics by round of the program. However, an examination of veteran status indicates that LPW contractors hired veterans at levels which exceed the norms in the construction industry, 39 percent versus 32 percent. This observation is also true for Vietnam-era veterans who represented 13 percent of the LPW labor force and 11 percent of the construction labor force. Veterans employed by the LPW contractors were not, by and large, discharged from the military for medical reasons, nor did they receive disability ratings from either the military or the Veterans Administration.

The second round of LPW legislation also contained the unprecedented requirement that at least 10 percent of the amount of each LPW grant (with the exception of 79 projects funded under the $70 million set aside for project applications erroneously denied in Round I) be expended with minority businesses. These were defined by the legislation as " ... a business at least 50 per centum of which is owned by minority group members or, in the case of a publicly owned business, at least 51 per centum of the stock of which is owned by minority group members." The Act identified minority group members as citizens of the United States who are Negroes, Spanish-speaking, Orientals, Indians, Eskimos, or Aleuts. The legislation also authorized the Secretary of Commerce to waive the provision in situations where it was unreasonable to require its fulfillment. The purpose of this requirement, which was introduced by Congressman Parren Mitchell of Maryland during the floor debate in the House, was to help eliminate discrimination in construction and related industries and to help bring minority firms into the mainstream of those industries.

1. MBE Background

In response to enactment of the 10 percent MBE requirement, EDA launched an intensive management effort directed toward insuring that at least $400 million of the $4 billion appropriation went to minority contractors and suppliers. From the outset, it was recognized that implementation of this requirement was perhaps the single most challenging task in the LPW program. Prior to the LPW program, only a small percentage of the public works funds expended by Federal, State, and local governments were going to MBEs. As a result, few possessed the experience, capital, credit, or bonding capacity to compete successfully for prime contracts. In addition, few non-minority prime contractors were accustomed to working with minority subcontractors or suppliers, and, understandably, most had no desire to abandon established relationships to work with minority firms with which they had no previous experience and which often had no track record. The task of implementing the program to meet the 10 percent requirement was further complicated by the legislatively required rigid timetable for overall implementation of the LPW Program.

To overcome these and related problems in carrying out the MBE requirement, an implementation approach was developed that combined rigorous standards and procedures for its enforcement, expanded assistance to minority construction and supply firms and strongly supportive public statements on the requirement. Commerce Department officials, White House staff, and Members of Congress, on numerous occasions, publicly expressed their commitment to meeting the MBE requirement, and President Carter cited it as one means of helping to address the economic needs of minority citizens. The public statements were backed up with numerous meetings to discuss MBE participation and request assistance from minority contractors and suppliers, majority contractors, representatives of surety companies and lending institutions, and LPW grant recipients.

2. Enforcement Procedures

EDA staff developed and enforced strict procedures to ensure that prime contractors would seek out and use qualified minority subcontractors and suppliers. These procedures were set forth in detailed Guidelines and a Technical Bulletin which were mailed to all grantees in August through October of 1977.

The procedures established by EDA to assure that the 10 percent MBE requirement was met included the following steps.

- o All bids for prime contracts included the name and address of MBE subcontractors and suppliers the bidder intended to use, a description of the work to be performed by each MBE, and the aggregate amount to be paid to all MBEs. Bids without this information were non-responsive and therefore ineligible for award of contract.

- Prior to release of the first letter-of-credit for 50 percent of grant funds, EDA responded to all complaints and reviewed a report from the grantee listing the name and address of each proposed MBE, a description of the work to be performed by each MBE, and the amount to be paid each MBE.

- Following the execution of each contract with an MBE, grantees filed with EDA a report signed by the MBE which verified the amount of the contract.

- When construction of a project was 40 percent complete, the grantee filed a second report listing the name and address of each MBE, a description of the work to be performed by each MBE, and the amount to be paid each MBE. The second letter-of-credit for the remaining 50 percent of grant funds was issued only if this report was substantiated by the verification of contracts by the MBEs or if satisfactory explanations and assurances were obtained from the grantee.

- As part of project close-out, auditors are verifying the amount paid to MBEs by cancelled checks or statements from MBEs. Grantees have been advised that if an audit reveals that insufficient funds were expended for MBEs reported to and cleared by EDA and if a waiver is inappropriate under established criteria, EDA will require reimbursement of grant funds equal to the amount of the shortfall. As of September 30, 1980, no such situation had occurred.

In order to process the reports and perform other monitoring responsibilities, EDA established special 10 percent MBE monitoring units in Washington and in each Regional Office. In addition, EDA's legal and project management staffs devoted considerable time to the MBE requirement.

The most difficult monitoring responsibility involved the determination on a case by case basis of whether, and to what extent, each proposed MBE expenditure should be counted toward fulfillment of the 10 percent MBE participation requirement. Such determinations were necessary if the program was to achieve its objective of helping to develop and strengthen independent minority-owned firms that could ultimately compete in the construction industry. In its effort to verify the eligibility of the proposed MBE expenditures, EDA sought to determine whether:

- at least 50 percent of each MBE was owned by members of a minority group;

- those minority group members managed and controlled the MBE as distinguished from being passive agents or mere paper owners; and

- the MBE was to perform substantial and commercially useful functions as distinguished from acting as a mere "front" for or "conduit" to a non-minority firm.

During December 1977 and January 1978, grantees applied for their first letters of credit for some 7,000 projects and submitted lists of over 10,000 MBE contracts for those projects. Despite use of all available personnel, full review of each contract was impossible without substantial delays in project construction. In view of the program's stringent legislative deadlines, EDA instead chose to rely primarily on lists of minority-owned firms which it had gathered from the Small Business Administration (SBA), from local organizations receiving grants or contracts from what was then the Office of Minority Business Enterprise (OMBE),* and from other State and local public and private organizations.

When an MBE firm did not appear on such a list, EDA staff attempted to verify that the firm was a legitimate MBE by telephone checks with the best available source, usually an OMBE affiliate. Through this procedure, EDA was able to approve project starts and initial applications for letters of credit for the thousands of LPW projects with little or no delay. Such an approach was necessary to meet the legislatively imposed requirement that LPW project construction begin within 90 days of project approval.

By March 1978, EDA staff had noted danger signals sufficient to recommend an intensive investigation into the legitimacy of those MBEs listed as having either large numbers of contracts or widely dispersed contracts. Another target of the investigation were those projects where MBE participation credit was being claimed for the full cost of materials and supplies. Earlier, EDA had established a rule that where an MBE acted merely as a purchasing agent or a broker in connection with the provision of services or materials, only the commission or fee earned by the MBE was to be counted toward the 10 percent requirement, even though the MBE provided a legitimate and necessary service.

Additional detailed discussion of the methods used for such verification are included in an EDA interim report on the MBE requirement issued in September 1978.** That report also includes the complete texts of the Guidelines for 10% Minority Business Participation in LPW Grants and the EDA Minority Business Enterprise Technical Bulletin.

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* Now the Minority Business Development Agency.

** Local Public Works Program Interim Report on 10 Percent Minority Business Enterprise Requirement, Department of Commerce, Economic Development Administration, September 1978.

3. Assistance to Minority Firms

Because of the past exclusion of most minority firms from the vast majority of public works construction projects, it was expected that many such firms would need technical and financial assistance to take advantage of the 10 percent MBE provision of the LPW Program. Several steps were taken to increase the level of aid available to such firms and to insure that they were aware of its availability.

In mid-June 1977, EDA signed an agreement with OMBE, committing OMBE-funded organizations to provide all possible assistance to minority firms wishing to participate in the LPW Program. EDA subsequently provided OMBE with $1 million to enable key OMBE grantees to hire temporary staff to work with minority firms wishing to participate in LPW II construction projects. EDA also contracted with SBA to expedite processing of loan guarantees to qualified MBEs, particularly in 25 key cities. In addition, SBA agreed to provide technical and management assistance through its regular programs to minorities desiring to participate in the LPW Program. EDA also provided funds to three private organizations -- the National Association of Minority Contractors, the National Institute for Advanced Studies, and the Urban Development and Management Corporation -- to furnish a wide range of technical assistance to minority firms.

As a result of the arrangements made by EDA, technical help was provided to some MBEs participating in the LPW program. However, it was not possible to provide technical assistance at the management level to more than a small percentage of the minority-owned firms participating in the LPW Program. As a consequence, the local organizations funded by OMBE and two of the three private firms were used principally to help verify the legitimacy of MBEs. While the amount of technical assistance furnished was limited, almost all of the minority-owned firms working on LPW projects apparently were able to overcome technical and managerial problems by themselves or through private sources of assistance. As part of the evaluation of LPW, Abt Associates interviewed 570 minority general contractors, subcontractors, and suppliers, as well as local government officials representing 97 grantees. These interviews indicated that few MBEs failed to complete a contract for such reasons, and few LPW projects suffered because of a lack of Federally provided technical assistance to MBEs. The interview results were confirmed by the fact that EDA received few reports of such occurrences.

SBA was responsive to MBE requests for surety bond guarantees and for guarantees of working capital loans, but there was much less demand for SBA's services than expected. Although guarantees were given promptly to virtually all applicants, only 164 MBEs availed themselves of the SBA performance bond guarantee service. In addition, SBA approved loan guarantees aggregating $6.5 million for 121 MBEs.

There are several reasons for this relatively small use of SBA assistance. A contractor cannot obtain an SBA surety bond guarantee unless he first obtains a bond, and in some cases, MBEs lacked the track record, working capital or financial records to qualify even for a bond guaranteed by SBA. Furthermore, surety agents are reluctant to write small bonds because they are unprofitable, particularly when they involve the extra paperwork of an SBA guarantee. In any event, in most cases the prime contractor did not insist that the MBE subcontractors be bonded. This action increased the risk exposure of the prime contractors, but it was often the simplest way of dealing with the bonding problem. Evaluation data indicate that the majority of the prime contractors did not increase their bid prices to compensate for this added risk.

The small number of working capital loans is more difficult to explain. Again, SBA can only provide a guarantee if a bank is willing to make a loan, and some MBEs were probably not in a position to apply for a bank loan. On the other hand, some MBEs were able to obtain loans without an SBA guarantee, and others were able to do so after qualifying for a bond guaranteed by SBA. It has been suggested that many MBEs believed they could perform successfully without a loan and wanted to save the interest costs; however, they appeared to be in need of working capital as evidenced by widespread dissatisfaction with the slowness of payment of MBE contractors by their prime contractors. In this regard, it should be noted that slow payment seems to be prevalent in the construction industry, regardless of the type of subcontractor.

The LPW Program did not provide solutions to all of the problems of capital and bonding for small business in the construction field. It may be that these problems are inevitable. Nevertheless, as noted above, most MBEs seem to be fulfilling their LPW contract responsibilities satisfactorily, which suggests that bonding and working capital problems are not insurmountable obstacles to minority business development in the construction industry. Furthermore, it is expected that the LPW Program will provide a number of MBEs with enough added experience and capacity to qualify for bonding in future jobs, and that their LPW earnings will ease working capital problems or make conventional financing more accessible.

4. Current Status

Final data on MBE participation will not be available until final audits of all LPW projects have been completed. However, sufficient information is available to make reliable projections of total MBE participation. As of September 30, 1980, 3,903, or 46 percent of the projects subject to the MBE requirement, had been audited. These projects total $960 million, or 25 percent of the total project dollars. Their audit reports verify that $171 million or 18 percent of the project funds had been expended with the MBEs approved by EDA for the particular project. After comparing the audit results with the initial MBE reports from the same projects, EDA estimates that total participation by bona fide MBEs will equal $700 million, or 18 percent of the funds subject to the MBE requirement. Thus, LPW will not only meet, but exceed its 10 percent MBE requirement, an unprecedented accomplishment in public works construction.

As of September 30, 1980, EDA's records showed that 7,243 minority-owned firms are working or have worked on LPW projects. Many firms worked on more than one project, and the total number of MBE contracts exceeds 16,300. Contracts with MBEs range from those that involved less than $1,000 to a few involving over $1 million. The average MBE contract was approximately $43,000. More than 630 MBE contracts to 467 firms exceeded $200,000, while another 765 were between $100,000 and $200,000, thus demonstrating that there are many minority-owned firms capable of performing substantial construction or construction-related work. The distribution of these contracts by minority group is shown in Table 16.

By September 30, 1980, EDA had granted 1,430 waivers (representing 15 percent of the $3.905 billion in grant funds subject to the MBE requirement) to grantees unable to meet the 10 percent MBE requirement. In 1,124 of these situations (representing 12.8 percent of grant funds), the grantees did use minority-owned firms, but spent less than 10 percent of the grant funds for those firms, specifically, projects receiving partial waivers expended an average of 6.1 percent of their LPW grant funds (over $30 million) with MBEs. In only 306 cases (representing 2.2 percent of grant funds) were full waivers granted, primarily because of the disqualification of firms as bona fide MBEs by EDA and the inability of the grantee to replace them or other firms with bona fide MBEs. This inability was generally attributable to the fact that all contracts had already been signed or the lack of MBEs qualified to carry out the project tasks for which contracts had not been let. Very few waivers were granted in the early stages of the program because EDA required each grantee to take all possible steps to locate and use qualified MBEs.

Throughout the LPW II effort EDA worked to involve minority banks in the program with the hope that the benefits would extend beyond the term of the LPW Program and lead to an expanded future use of minority banking services by State and local governments. Early in the program, EDA sent letters to all grantees in areas served by minority-owned banks encouraging them to designate such banks to handle the EDA letter of credit. The initial response was disappointing. Believing that the poor response was due, in large part, to a Treasury requirement that each grantee use only one bank for all its LPW letters of credit, EDA staff in early May of 1978 asked Treasury to relax that rule so that cities could use minority-owned banks for part of their LPW projects. Treasury permission was

TABLE 16

DISTRIBUTION OF LPW CONTRACTS BY MINORITY GROUPS

Minority Group	Number of Firms	Percent of Firms	Number of Contracts	Percent of Contracts	Contract Dollars	Percent of Contract Dollars
Aleut	14	0.2%	23	0.1%	$ 2,106,543	0.3%
Black	4,010	55.4	9,036	55.5	265,424,413	37.8
Eskimo	13	0.2	15	0.1	2,808,723	0.4
Indian	851	11.7	2,118	13.0	87,070,442	12.4
Oriental	380	5.2	869	5.3	49,854,850	7.1
Spanish	1,975	27.3	4,242	26.0	294,916,014	42.0
Total	7,243	100.0%	16,303	100.0%	$702,180,985	100.0%

received, and the Assistant Secretary for Economic Development wrote to the mayors of major cities at the beginning of August of 1978 urging them to establish a letter of credit with a minority-owned bank and transfer funding for certain projects.

The result of this effort was that 70 LPW projects, with total obligations exceeding $79,585,000, were financed by letters of credit placed through minority banks. Of the 845 projects totalling $1,120,728,000 awarded in cities with minority banks, 8 percent of the projects and 7 percent of the obligations involved minority banks. However, it should be noted that minority bank participation is somewhat more significant than the above figures indicate. In certain cases, LPW grantees maintained or are maintaining minimum balance checking accounts in minority banks to make disbursements after transferring funds from a non-minority bank handling the letter of credit. The data above do not reflect the numbers of projects or the amounts involved in such transactions.

In the extremely large LPW II program, complex because of its purpose, timing, and other requirements, the 10 percent MBE requirement became the single most controversial provision. There were 27 legal challenges to the constitutionality of the MBE requirement. These challenges culminated in the July 2, 1980 decision of the United States Supreme Court in the case of Fullilove versus Klutznick. In a 6-3 decision, the Court upheld the constitutionality of the LPW II MBE provision.

5. Impact of the MBE Requirement on Firms and Grantees

The Abt Associates interviews cited above revealed that for both rounds of the program, the age of the firm was lower for minorityowned firms (9.7 years at the time of the survey in September of 1979) than for their majority-owned counterparts (25.4 years). However, there was little difference in the age of the minority firms between LPW I (12 years) and LPW II (9.5 years). The newest minority firms were suppliers (average age 9.3 years) followed by subcontractors (9.5 years) and general contractors (11.5 years). Non-minority firms exhibited an age pattern more typical of the construction industry, with the oldest firms concentrated in the supply industries (30.8 years), followed by general contractors (22.6 years) and subcontractors (20.9 years).

At the time of the survey in September 1979, 91.6 percent of the MBEs identified were still in business. Success rates were higher for MBE general contractors (98.3 percent) than for MBE subcontractors (91.5 percent) or suppliers (88.7 percent). This pattern of higher success rates for those firms more directly involved with the LPW grant is contrary to the pattern of success rates exhibited by majority-owned firms (general contractors -- 97.9 percent, subcontractors -- 98.2 percent, and suppliers -- 99.2 percent).

Approximately 2,900 (40 percent) of the 7,243 minority-owned firms participating in LPW had been established between 1976 and 1979, as compared to approximately 1,400 of their majority-owned counterparts. Predictably, 94 percent of the 2,900 were established under LPW II with its 10 percent MBE requirement. Of these relatively new MBEs, 93 percent were still in business at the time of the survey in September of 1979; the comparable group of majority-owned new firms exhibited a similar success rate of 94 percent. MBEs were more likely to attribute the establishment of their firm at that time to the availability of LPW funding (36 percent) than were majority-owned firms (23 percent), particularly under LPW II. Table 17 presents for minority and majority firms the patterns of formation, relation to LPW, and failure among general contractors, subcontractors, and suppliers. Among MBEs, subcontracting firms were formed in the largest numbers, had the lowest probability of formation in direct response to LPW funding, and had the lowest failure rates; this pattern was generally representative of majority-owned new firms as well. New minority supply firms, on the other hand, were much more likely to have been formed in response to the LPW II program than were their majority counterparts. Fifty percent of all new minority suppliers reported having organized as a result of LPW II, as compared with only five percent of new majority suppliers.

In general, minority-owned firms reported that their LPW experience had been successful and profitable. Further, 20 of the grantees reported that they had either maintained or introduced a local MBE participation requirement for public construction work; several of these new requirements were directly traced to the grantee's LPW experience.

F. DETAILED INDIVIDUAL LPW REPORTS

As stated previously, this chapter summarized the major findings from the various evaluations of the LPW Program conducted under the auspices of the Department of Commerce. Additional material from these evaluations is presented in the comprehensive individual reports published separately. Evaluations conducted by or for the Department of Commerce are listed in Appendix C of this report, with LPW evaluations conducted by other entities listed in Appendix D.

TABLE 17

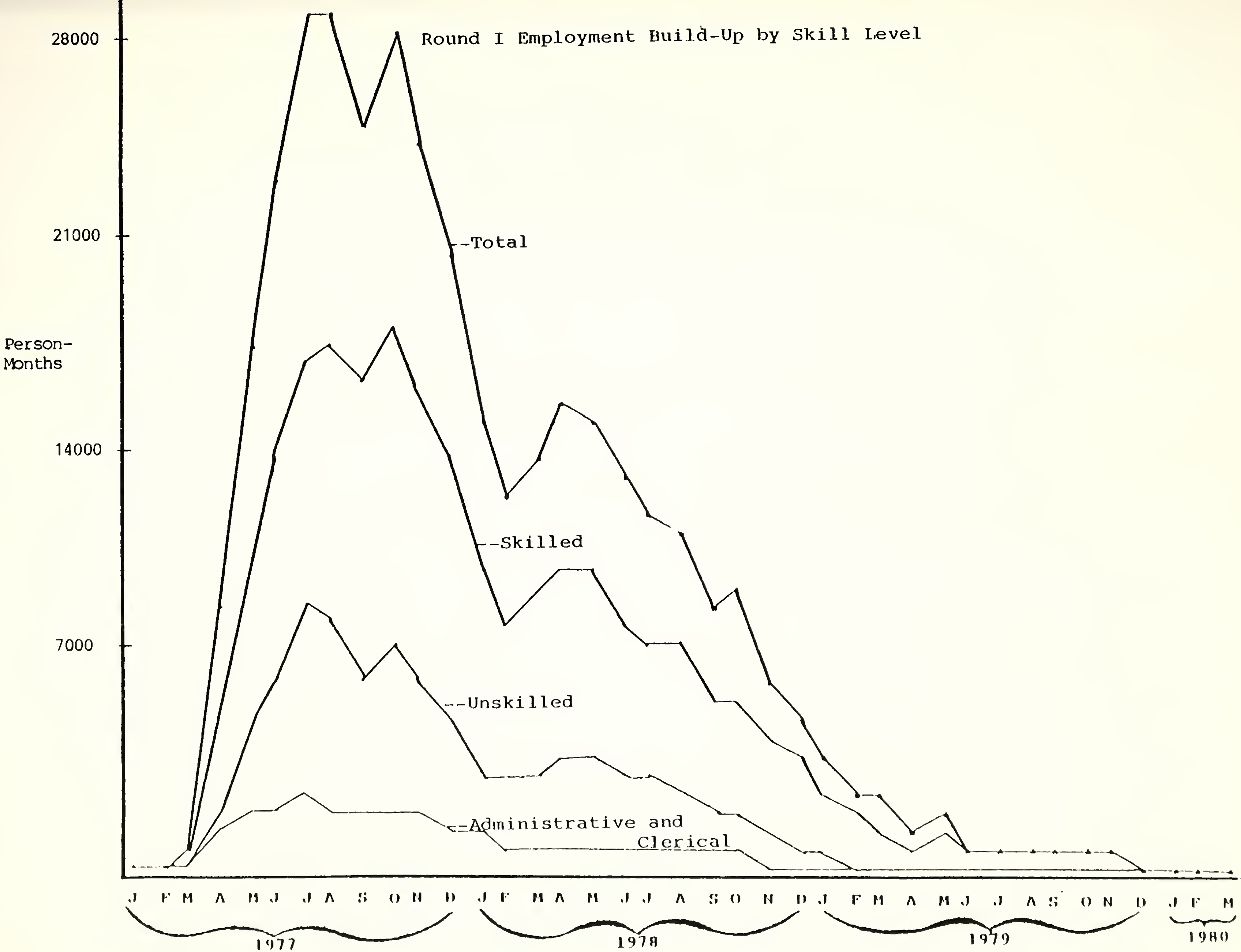
COMPARISON OF NEW FIRMS BY MAJORITY AND MINORITY OWNERSHIP

	Minority-owned		Majority-owned	
	LPW I	LPW II	LPW I	LPW II
Number of new firms (Established 1976-1979)				
-General Contractors	14	185	71	383
-Subcontractors	138	1,991	208	416
-Suppliers	15	595	55	286
Number of new firms formed in response to LPW funding (Percent)				
-General Contractors	0	86	14	113
	(0)	(46)	(20)	(30)
-Subcontractors	31	650	79	108
	(22)	(33)	(38)	(26)
-Suppliers	0	299	(0)	14
	(0)	(50)	(0)	(5)
Percentage of all new firms which are now inactive				
-General Contractors	0	8	0	15
-Subcontractors	0	5	6	0
-Suppliers	0	17	0	5
Percentage of new firms formed in response to LPW funding which are now inactive				
-General Contractors	0*	17	0	12
-Subcontractors	0	9	20	0
-Suppliers	0*	24	0*	0*

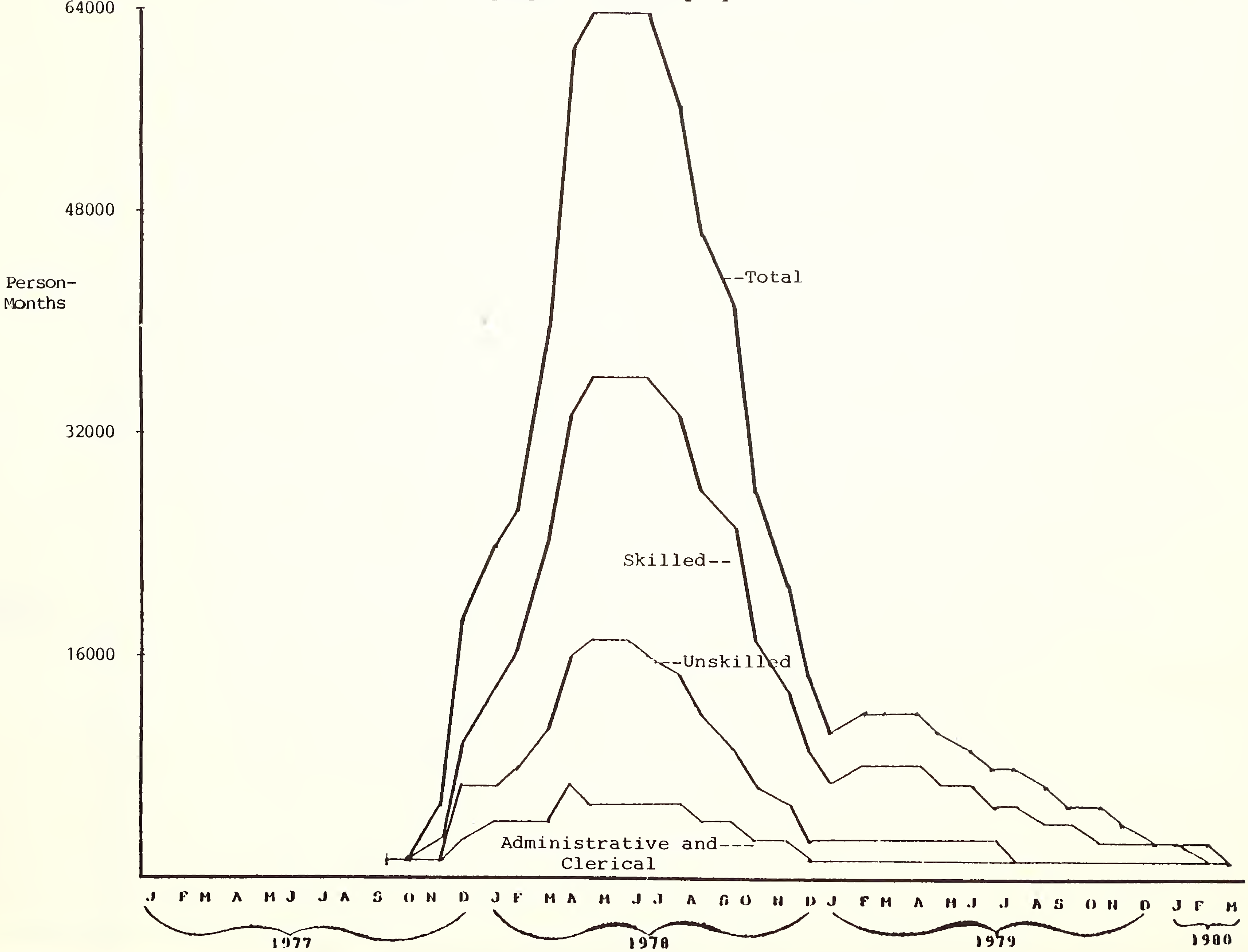
*No observations

Appendix A

LPW Employment Build-Up Patterns

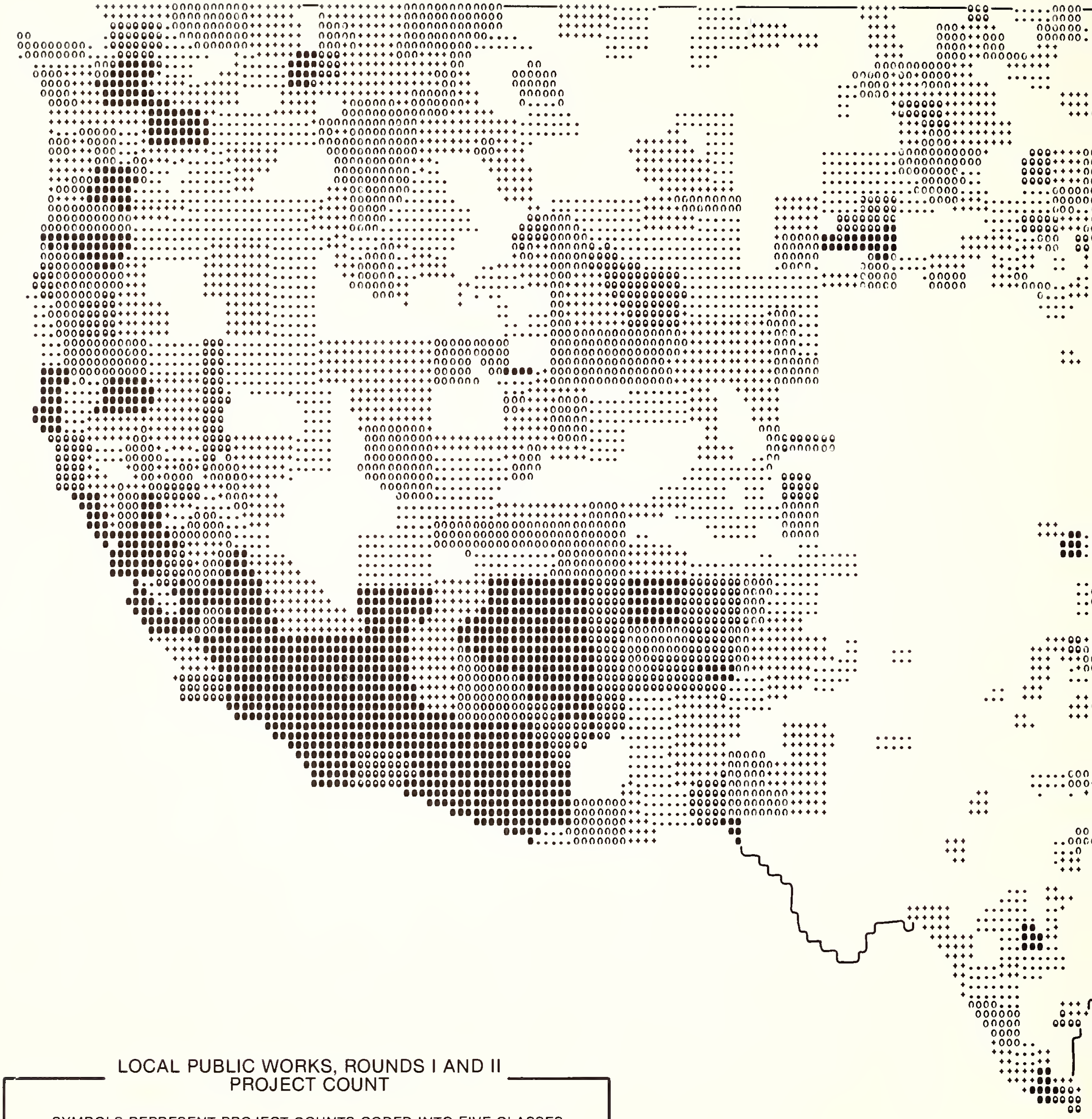

Round I Employment Build-Up by Skill Level

Round II Employment Build-Up by Skill Level



Appendix B

Maps of LPW Project Counts and Funding Levels

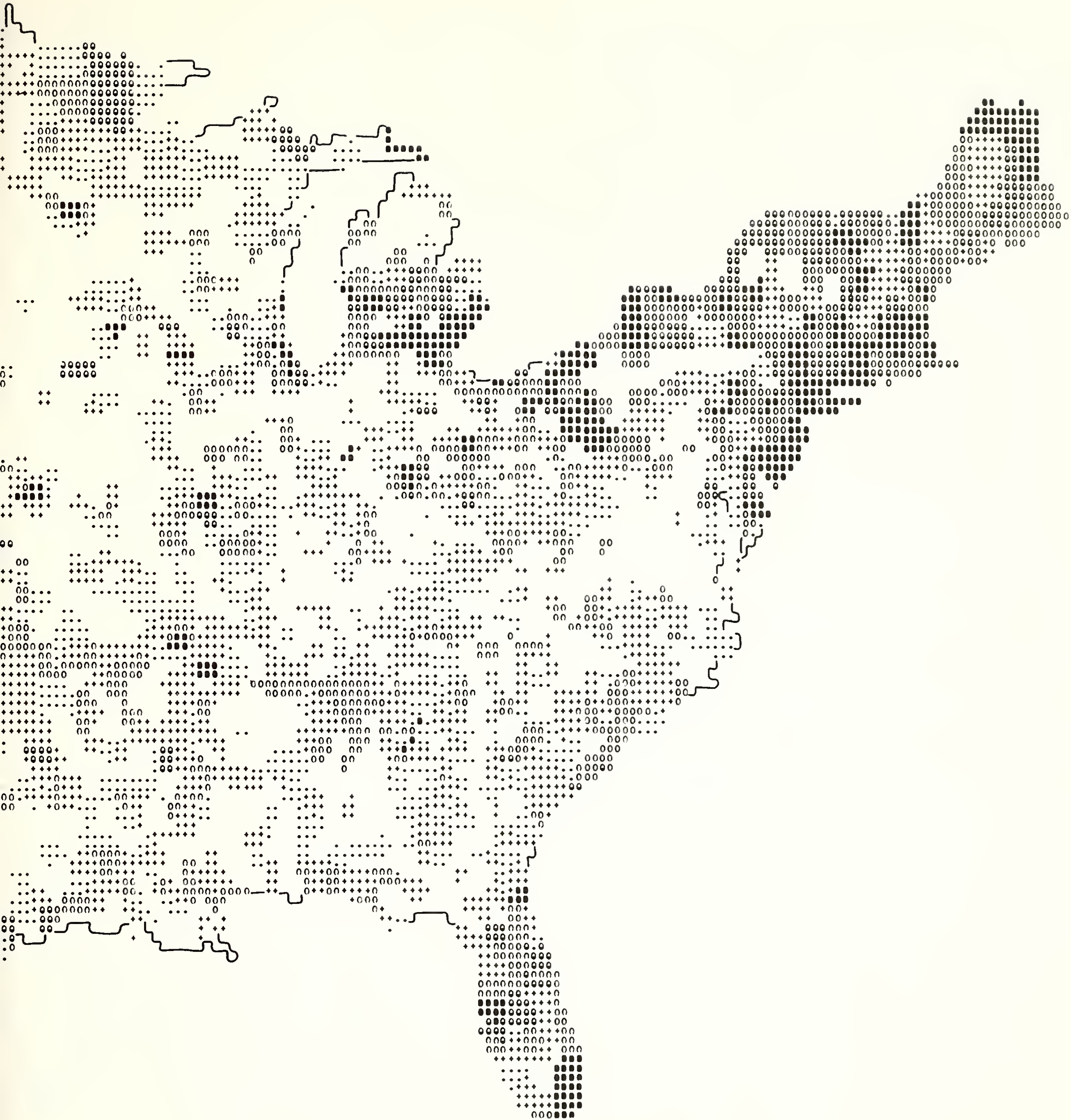


LOCAL PUBLIC WORKS, ROUNDS I AND II
PROJECT COUNT

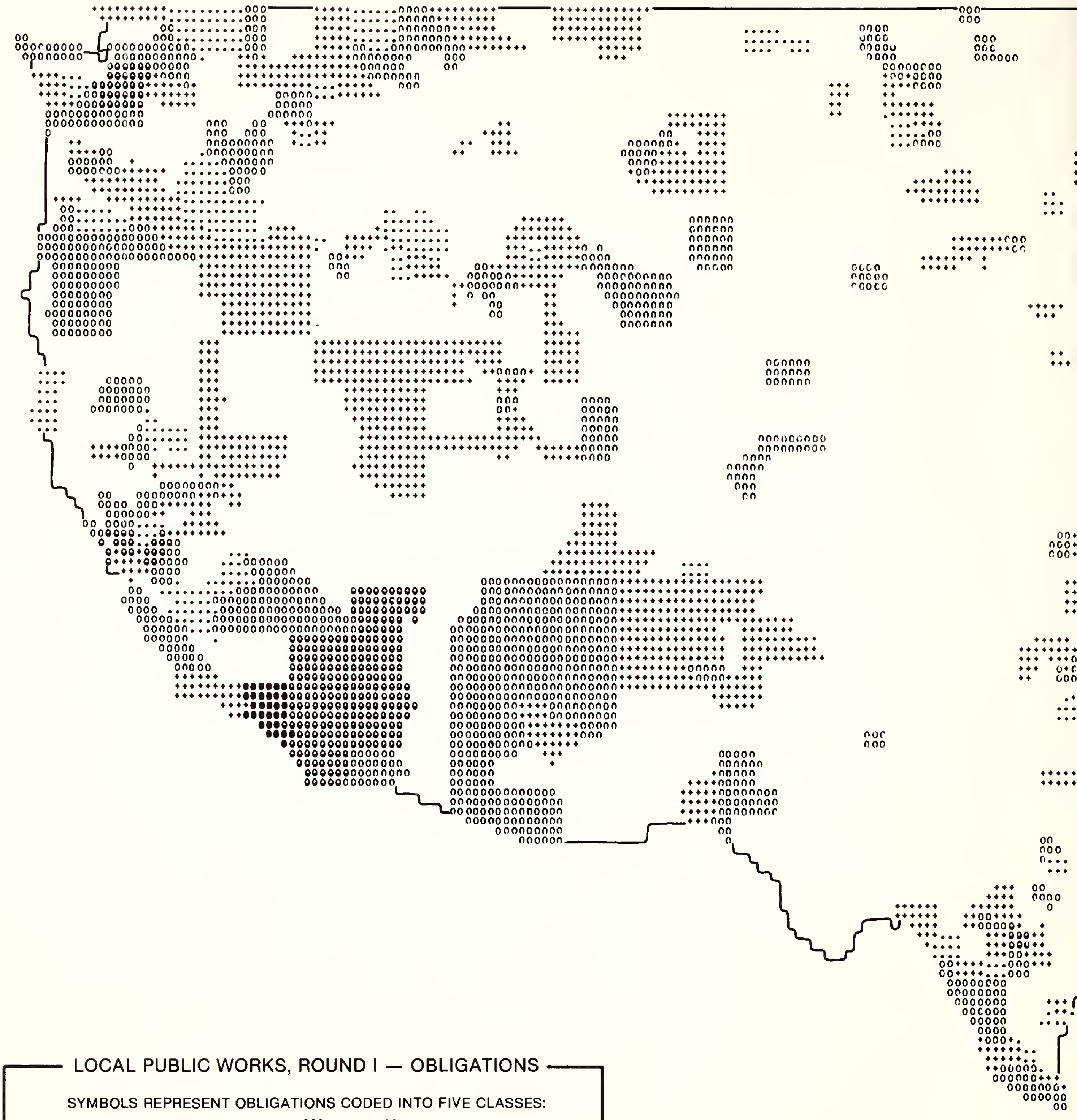
SYMBOLS REPRESENT PROJECT COUNTS CODED INTO FIVE CLASSES:

SYMBOL	●	0	o	+	·
PROJECT COUNT	15 AND OVER	10 TO 14	5 TO 9	2 TO 4	1

PROJECT COUNTS FOR ALASKA, HAWAII, PUERTO RICO, AND OTHER TRUST TERRITORIES WERE 133, 70, 447, AND 43 RESPECTIVELY.



LOCAL PUBLIC WORKS, ROUNDS I AND II PROJECT COUNT

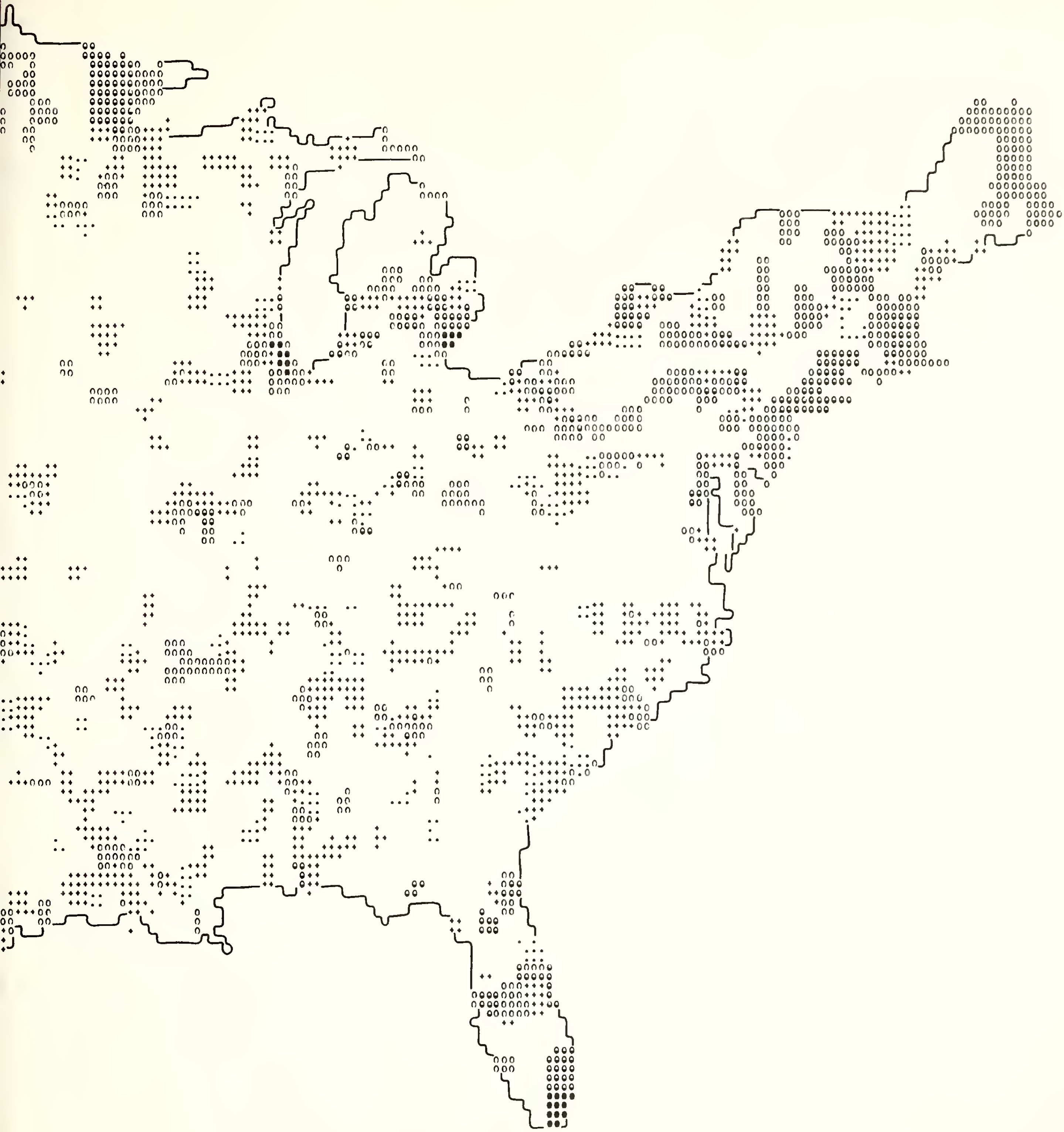


LOCAL PUBLIC WORKS, ROUND I — OBLIGATIONS

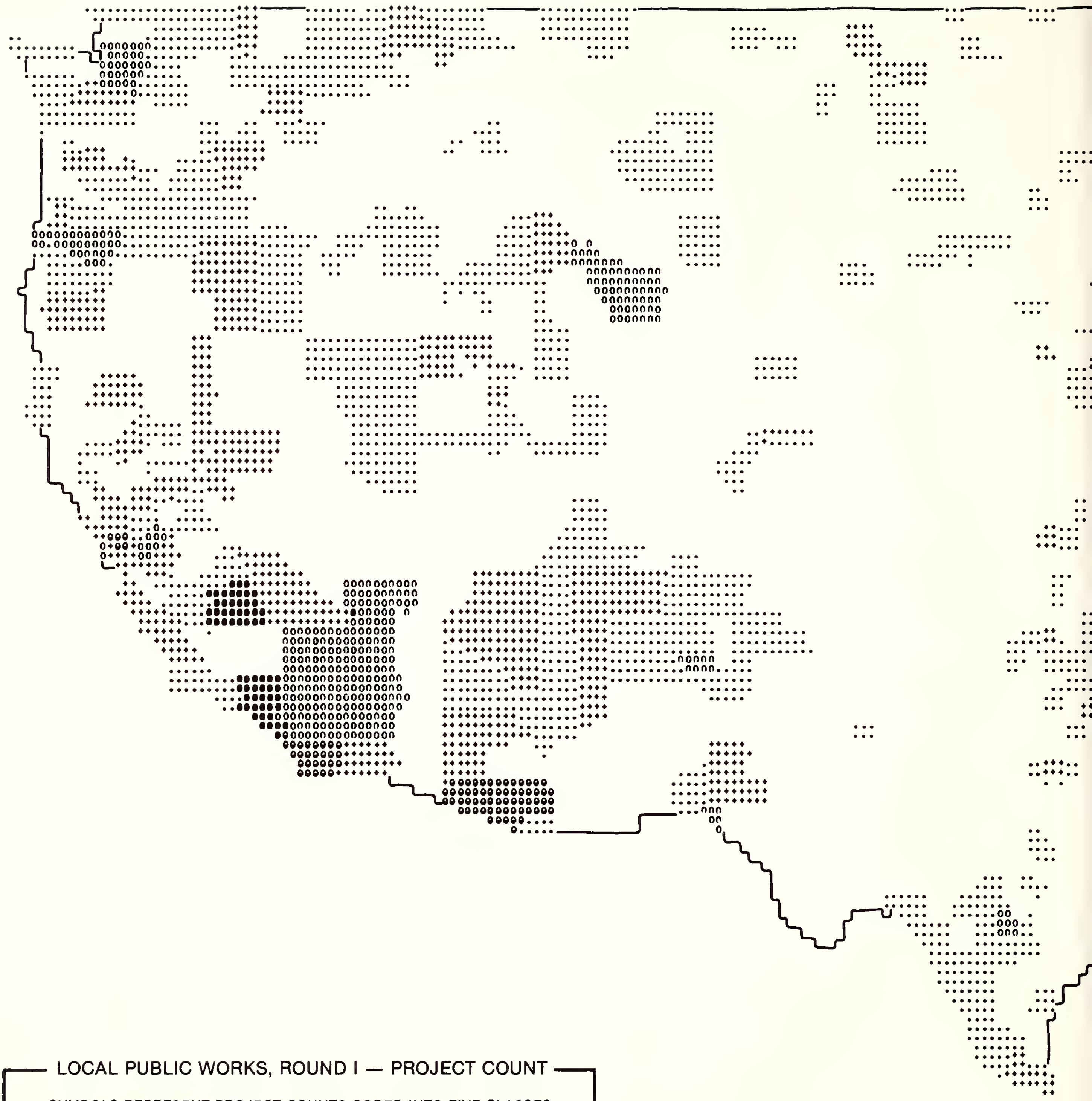
SYMBOLS REPRESENT OBLIGATIONS CODED INTO FIVE CLASSES:

SYMBOL	●●● ●●● ●●●	000 000 000	000 000 000	+++ +++ +++	... ...
OBLIGATIONS (Millions $)	25 AND OVER	5.0 TO 24.9	1.0 TO 4.9	.25 TO .9	.24 AND LESS

OBLIGATIONS FOR ALASKA, HAWAII, PUERTO RICO, AND OTHER TRUST TERRITORIES WERE $10.2 MILLION, $9.9 MILLION, $116.1 MILLION, AND $10.2 MILLION RESPECTIVELY.



LOCAL PUBLIC WORKS, ROUND I OBLIGATIONS

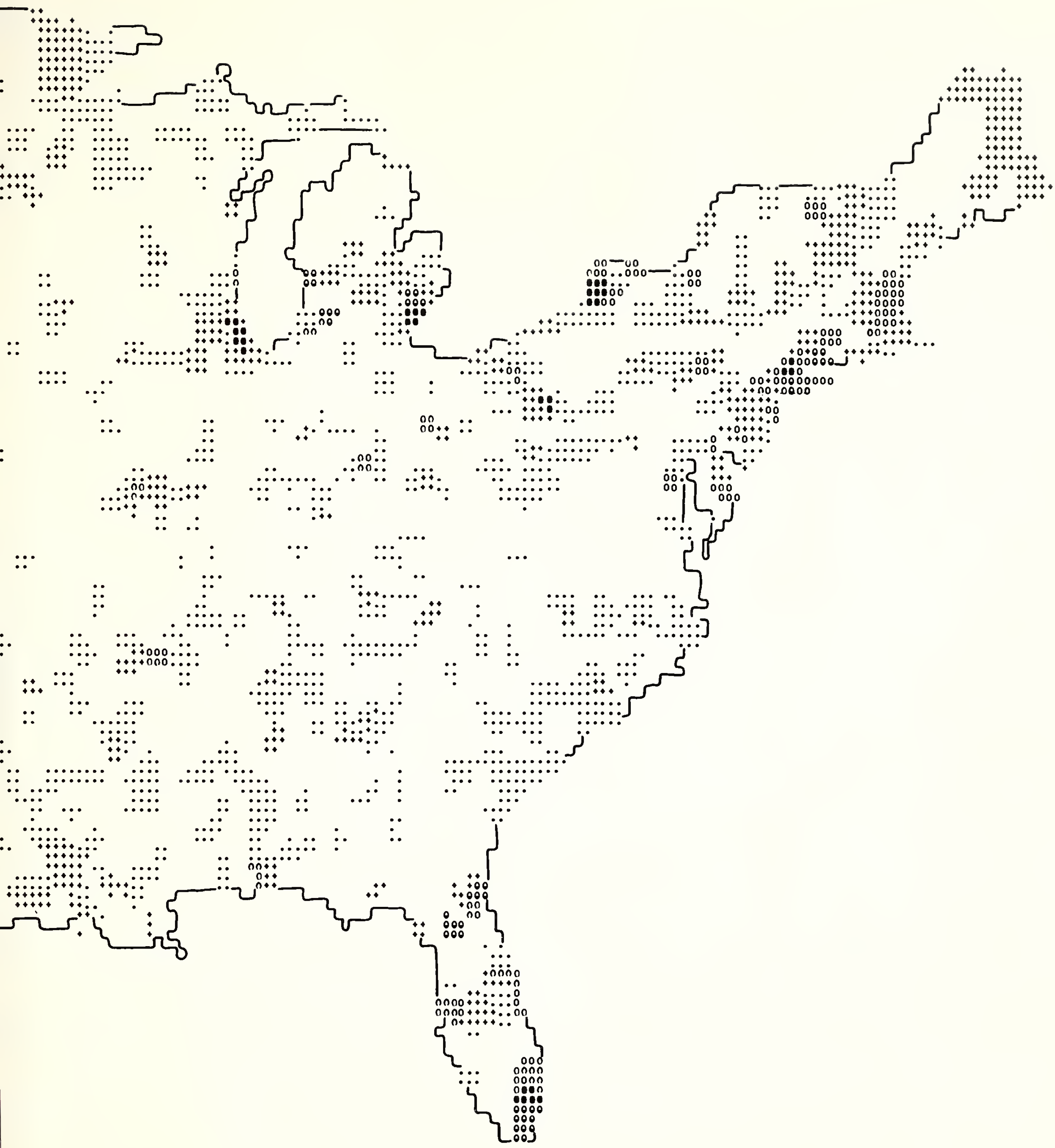


LOCAL PUBLIC WORKS, ROUND I — PROJECT COUNT

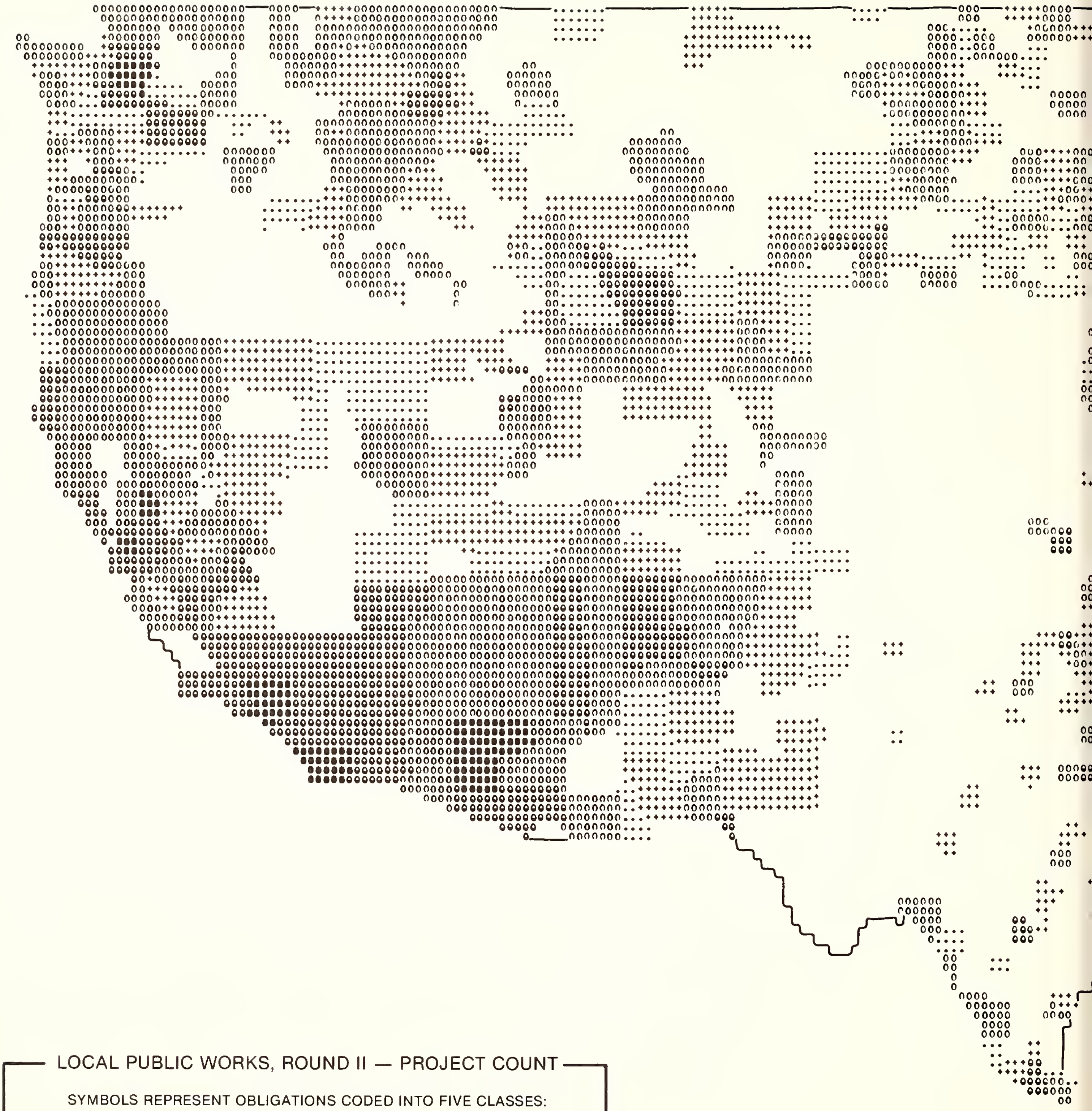
SYMBOLS REPRESENT PROJECT COUNTS CODED INTO FIVE CLASSES:

SYMBOL	■	●	○	◆	·
PROJECT COUNT	15 AND OVER	10 TO 14	5 TO 9	2 TO 4	1

PROJECT COUNTS FOR ALASKA, HAWAII, PUERTO RICO, AND OTHER TRUST TERRITORIES WERE 17,14,174 AND 7 RESPECTIVELY.



LOCAL PUBLIC WORKS, ROUND I
PROJECT COUNT

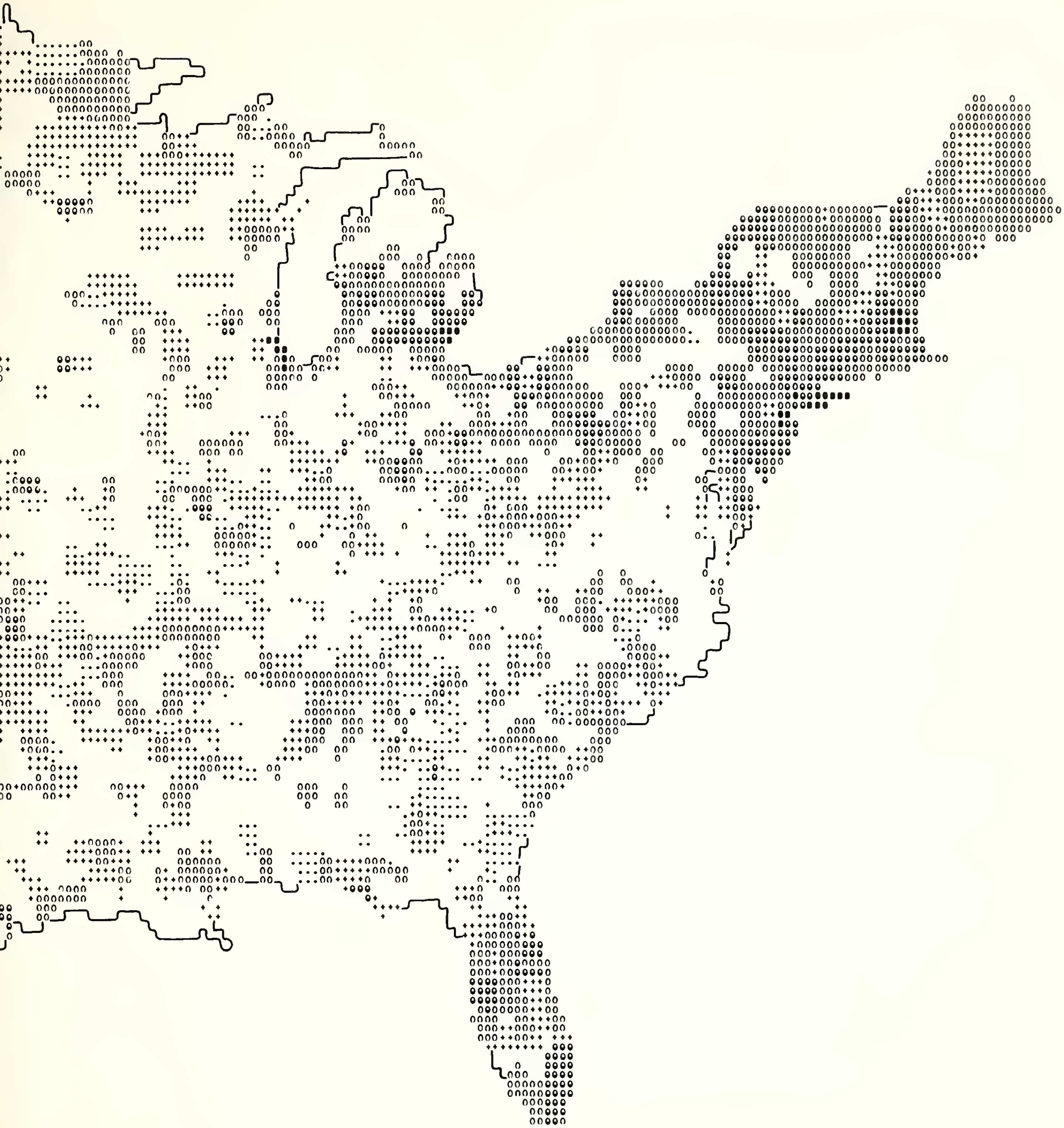


LOCAL PUBLIC WORKS, ROUND II — PROJECT COUNT

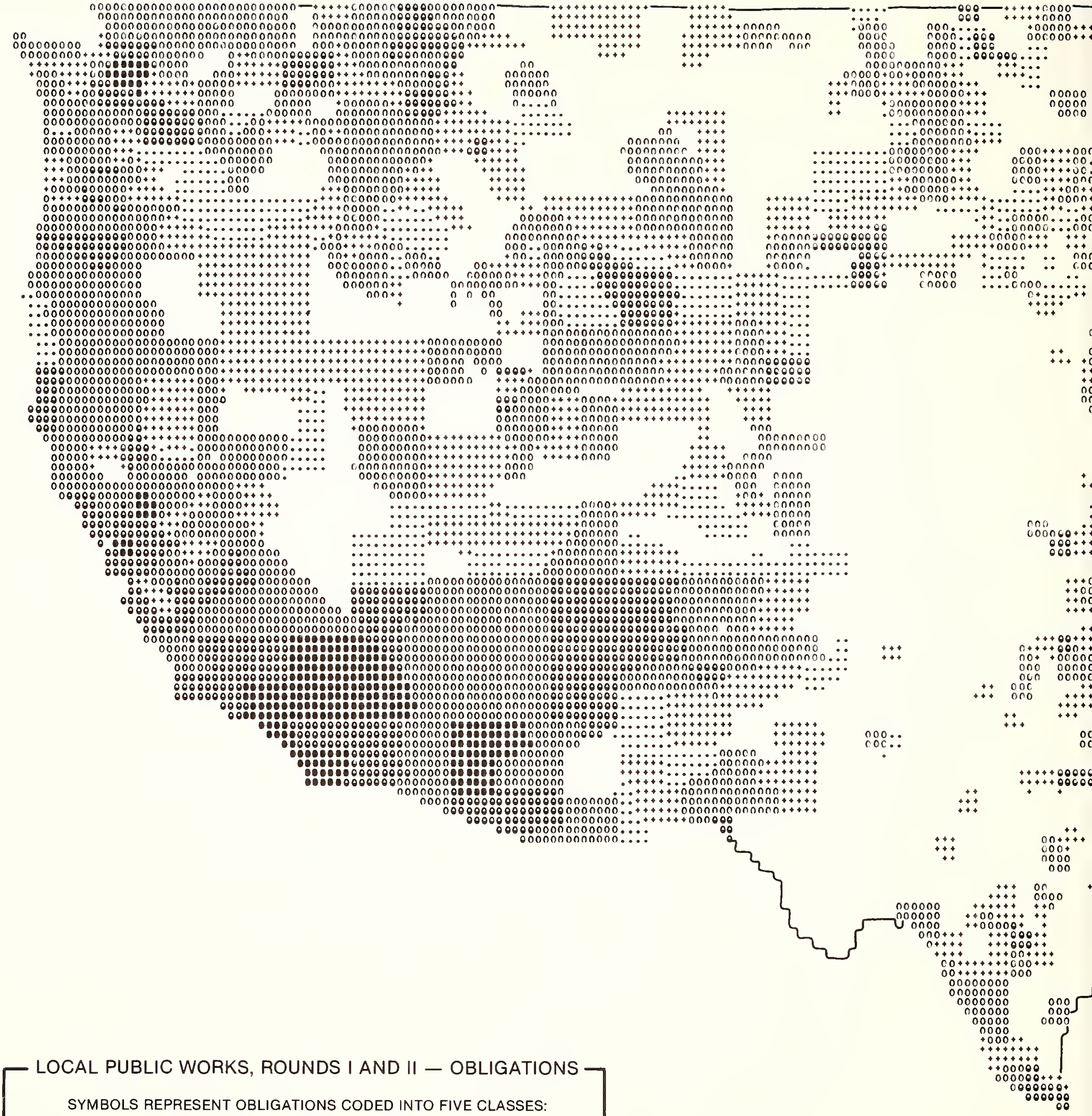
SYMBOLS REPRESENT OBLIGATIONS CODED INTO FIVE CLASSES:

SYMBOL	●●●	000	000	+++	...
OBLIGATIONS (MILLION $)	25 AND OVER	5.0 TO 24.9	1.0 TO 4.9	.25 TO .9	.24 AND LESS

OBLIGATIONS FOR ALASKA, HAWAII, PUERTO RICO, AND OTHER TRUST TERRITORIES WERE $45.6 MILLION, $30.2 MILLION, $168.1 MILLION, AND $19.9 MILLION RESPECTIVELY.



LOCAL PUBLIC WORKS, ROUND II OBLIGATIONS

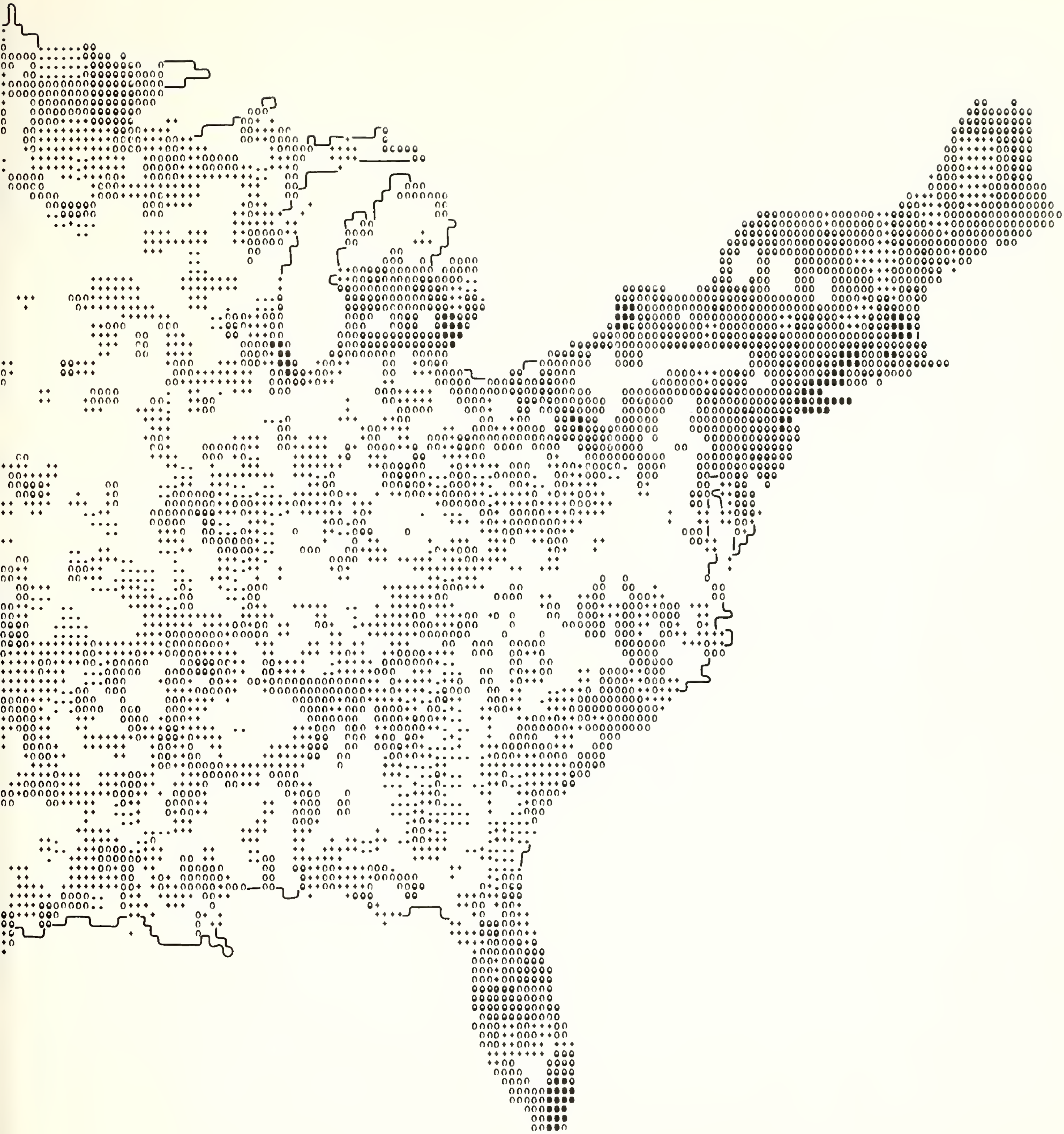


LOCAL PUBLIC WORKS, ROUNDS I AND II — OBLIGATIONS

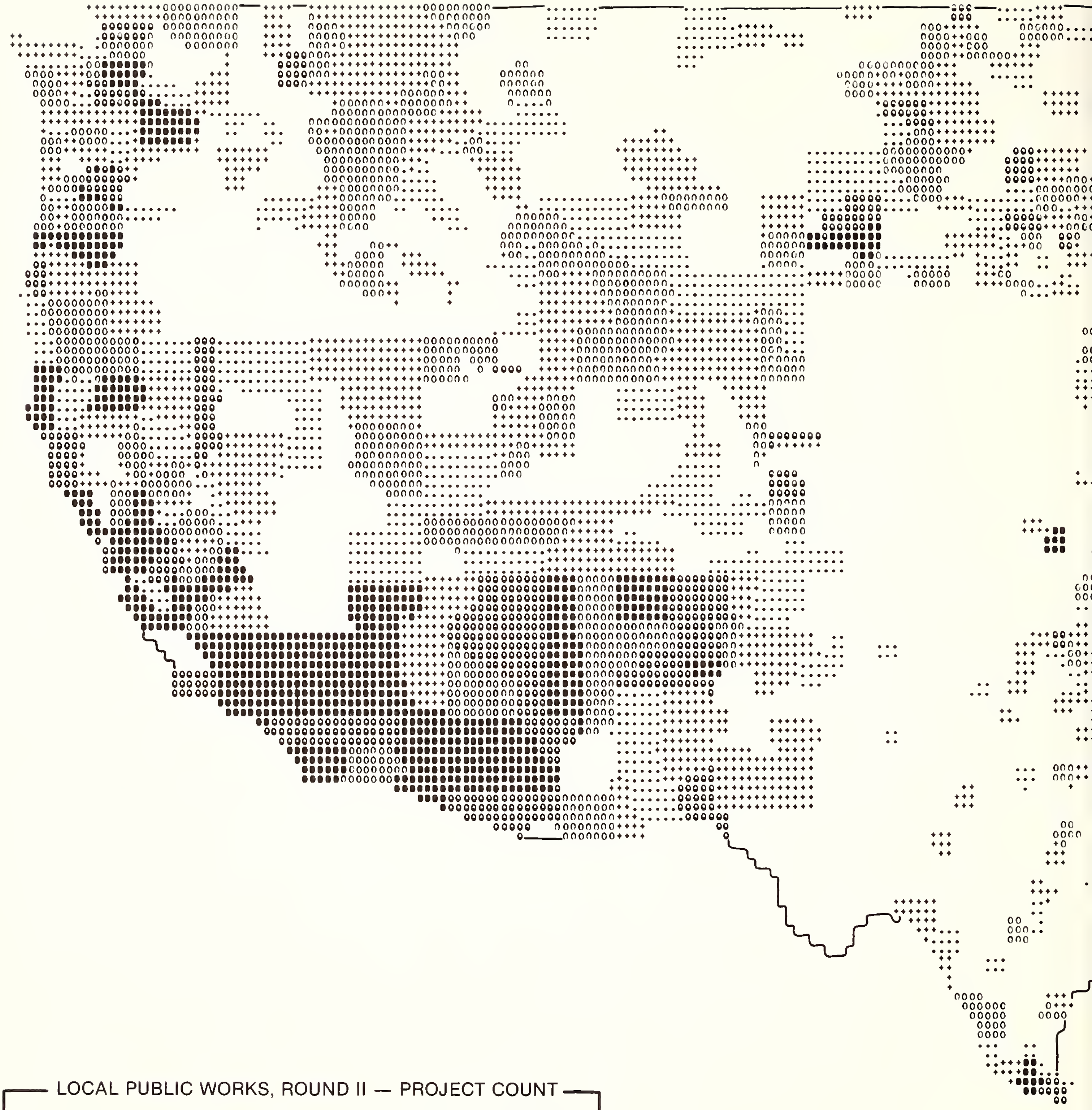
SYMBOLS REPRESENT OBLIGATIONS CODED INTO FIVE CLASSES:

SYMBOL	■	●	○	+	·
OBLIGATIONS (MILLION $)	25 AND OVER	5.0 TO 24.9	1.0 TO 4.9	.25 TO .9	.24 AND LESS

OBLIGATIONS FOR ALASKA, HAWAII, PUERTO RICO AND OTHER TRUST TERRITORIES WERE $55.8 MILLION, $40.1 MILLION, $284.2 MILLION, AND $30.1 MILLION RESPECTIVELY.



LOCAL PUBLIC WORKS, ROUNDS I AND II OBLIGATIONS

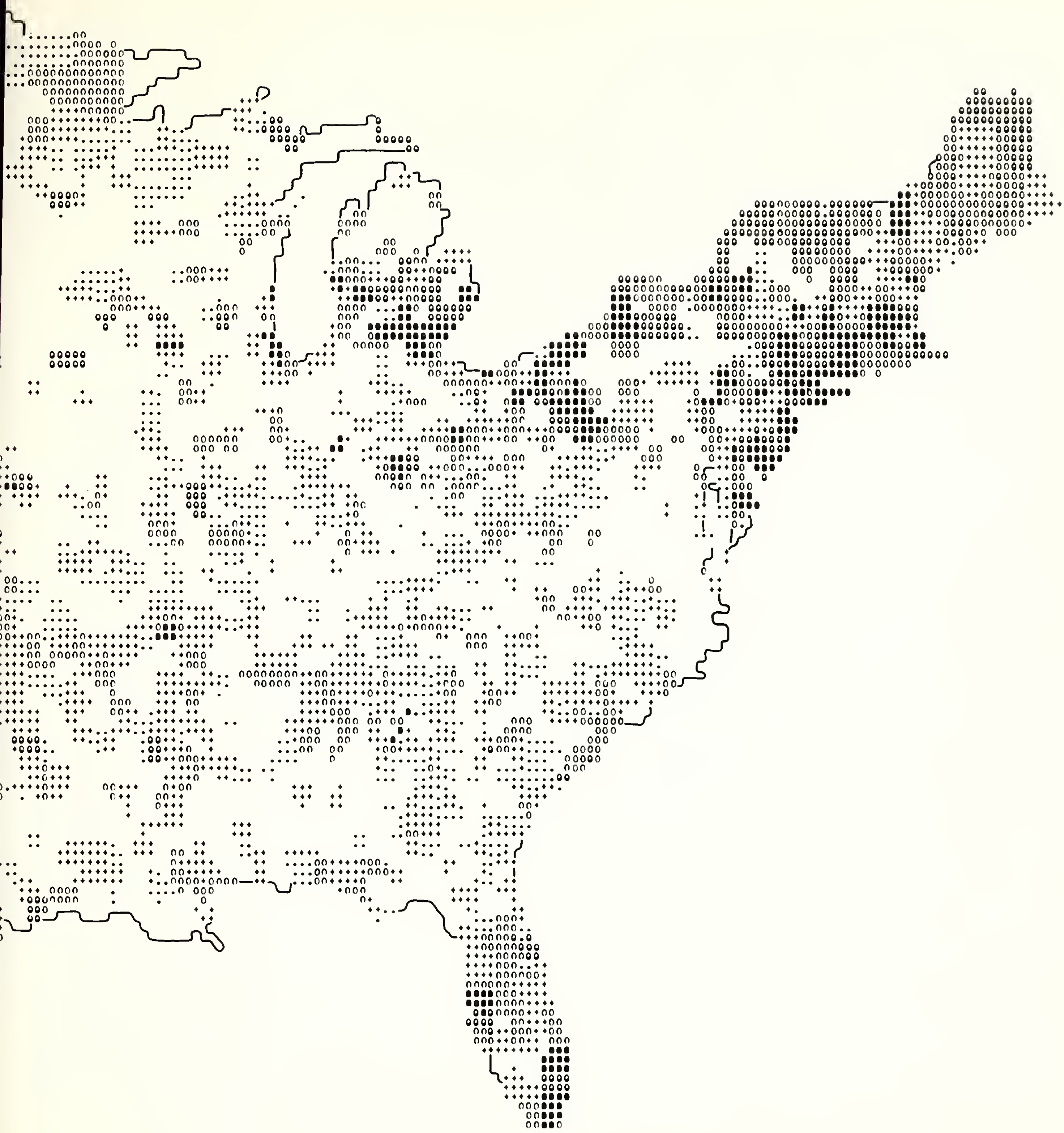


LOCAL PUBLIC WORKS, ROUND II — PROJECT COUNT

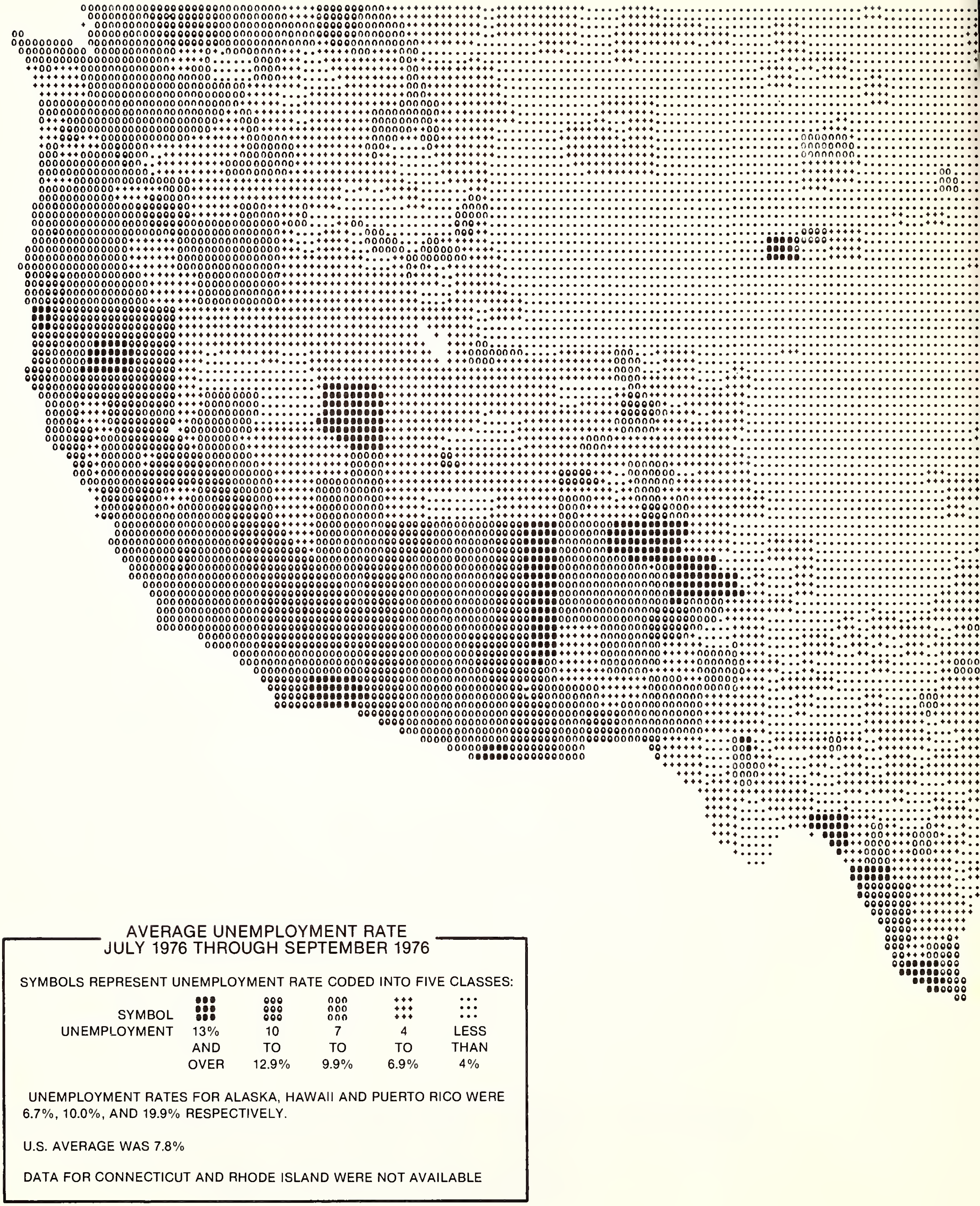
SYMBOLS REPRRESENT PROJECT COUNTS CODED INTO FIVE CLASSES:

SYMBOL	●●● ●●●	000 000 000	000 000 000	+++ +++ +++	··· ··· ···
PROJECT COUNT	15 AND OVER	10 TO 14	5 TO 9	2 TO 4	1

PROJECT COUNTS FOR ALASKA, HAWAII, PUERTO RICO AND OTHER TRUST TERRITORIES WERE 116, 56, 273, AND 36 RESPECTIVELY.



LOCAL PUBLIC WORKS, ROUND II
PROJECT COUNT



AVERAGE UNEMPLOYMENT RATE
JULY 1976 THROUGH SEPTEMBER 1976

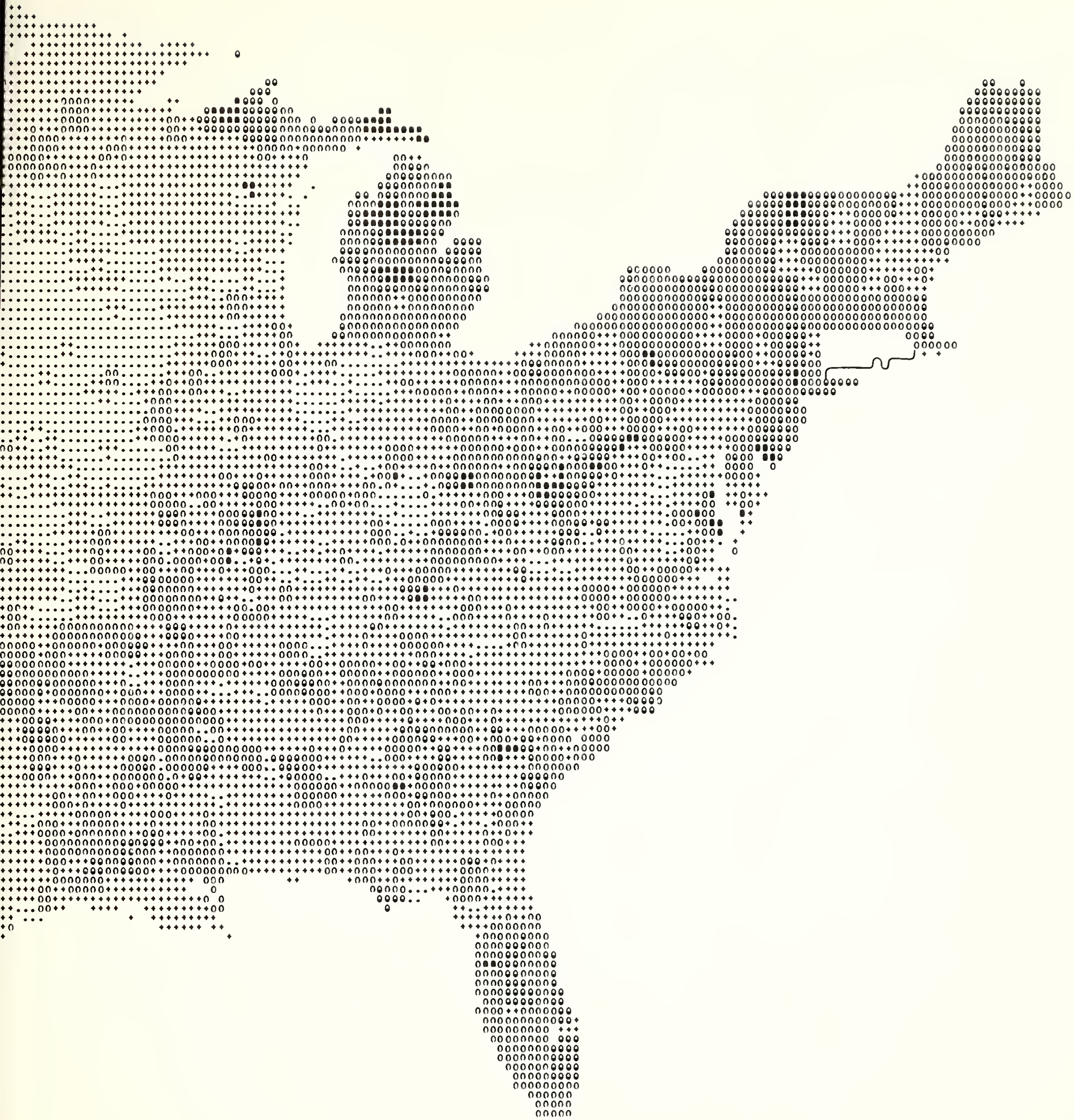
SYMBOLS REPRESENT UNEMPLOYMENT RATE CODED INTO FIVE CLASSES:

SYMBOL	●	0	o	+	·
UNEMPLOYMENT	13% AND OVER	10 TO 12.9%	7 TO 9.9%	4 TO 6.9%	LESS THAN 4%

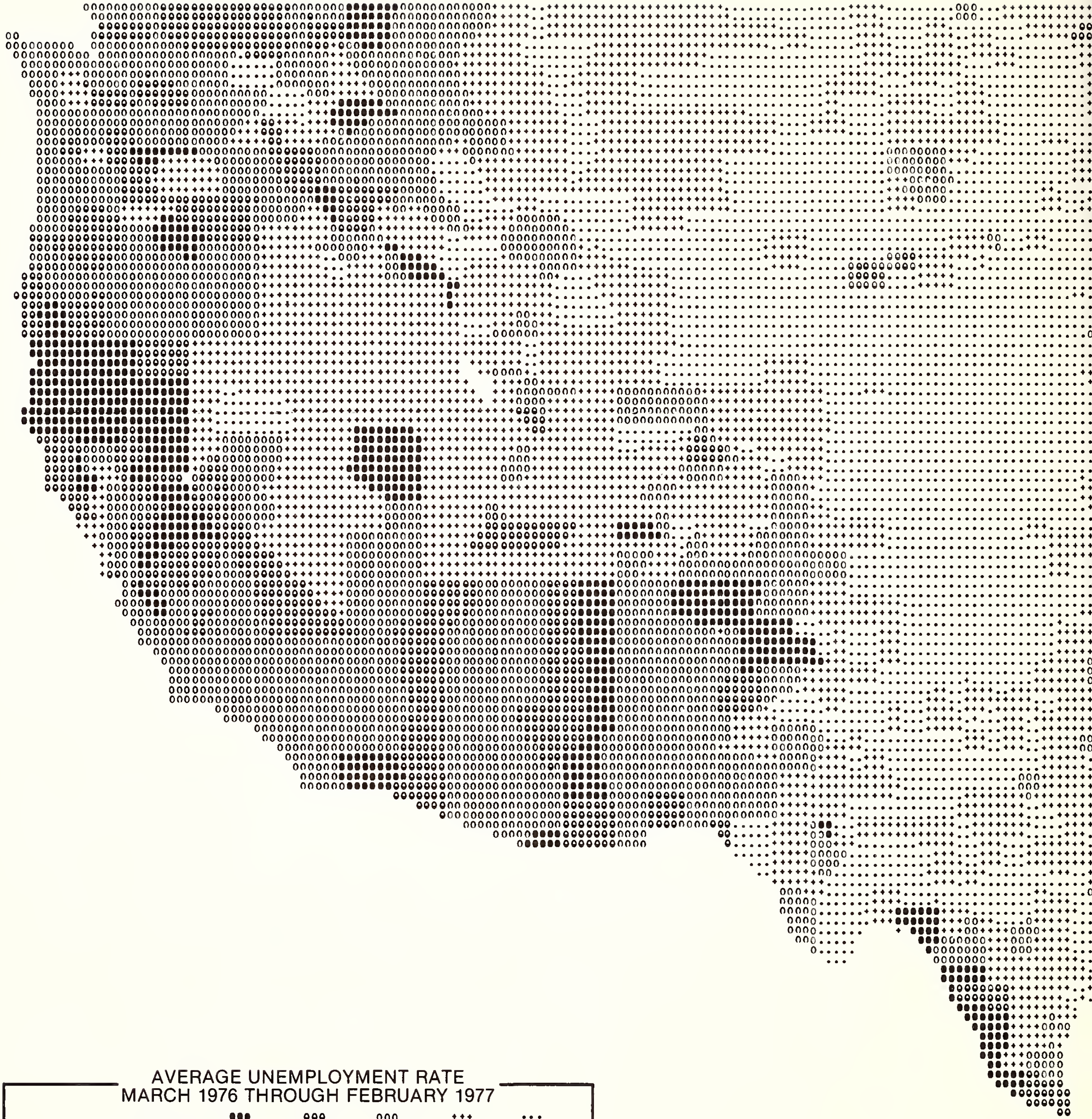
UNEMPLOYMENT RATES FOR ALASKA, HAWAII AND PUERTO RICO WERE 6.7%, 10.0%, AND 19.9% RESPECTIVELY.

U.S. AVERAGE WAS 7.8%

DATA FOR CONNECTICUT AND RHODE ISLAND WERE NOT AVAILABLE



AVERAGE UNEMPLOYMENT RATE
JULY 1976 THROUGH SEPTEMBER 1976



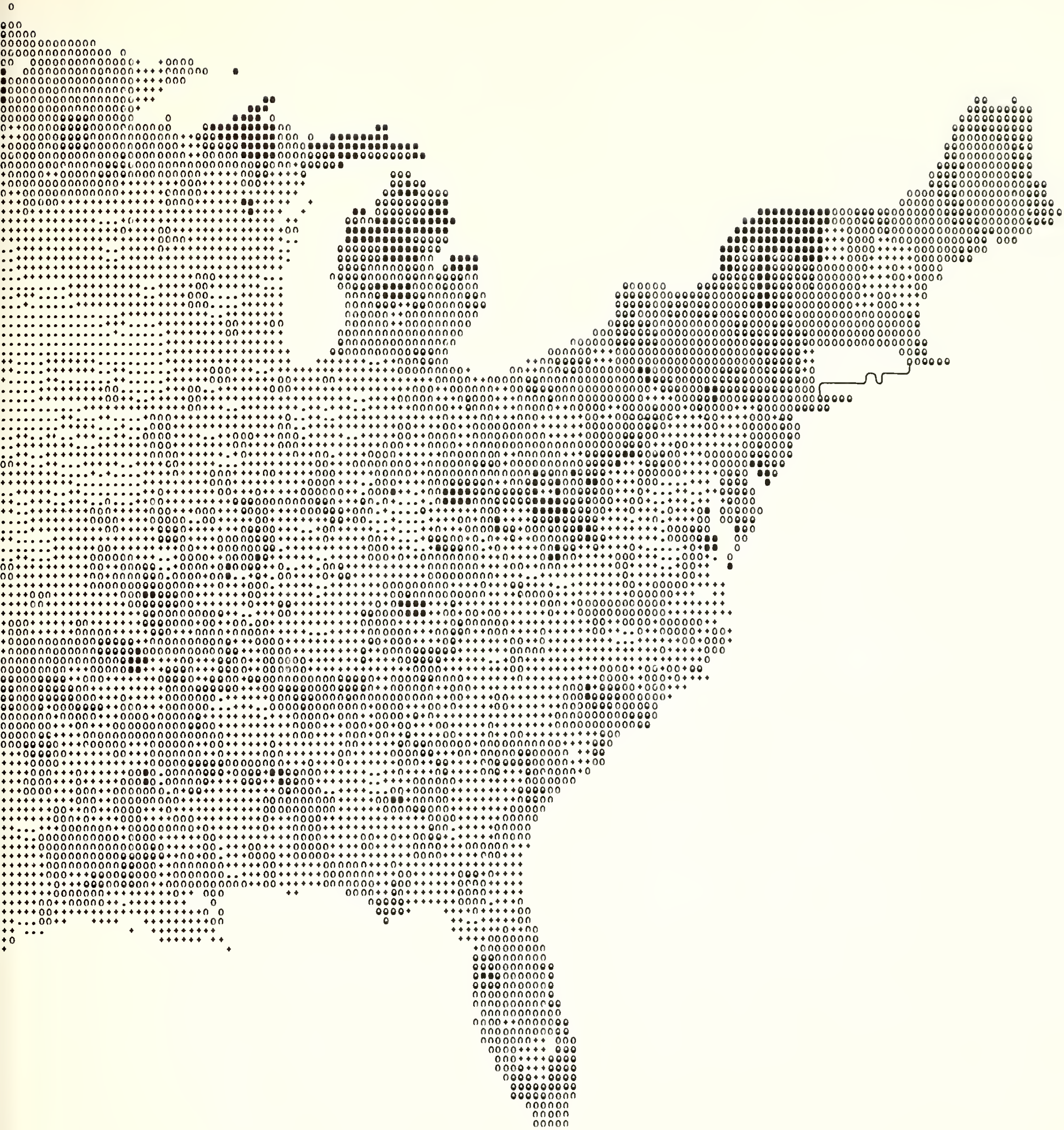
AVERAGE UNEMPLOYMENT RATE
MARCH 1976 THROUGH FEBRUARY 1977

SYMBOL	●	◉	○	+	·
UNEMPLOYMENT	13% AND OVER	10 TO 12.9%	7 TO 9.9%	4 TO 6.9%	LESS THAN 4%

UNEMPLOYMENT RATES FOR ALASKA, HAWAII AND PUERTO RICO WERE 8.4%, 9.5% AND 19.3% RESPECTIVELY.

U.S. AVERAGE WAS 7.6%

DATA FOR CONNECTICUT AND RHODE ISLAND WERE NOT AVAILABLE



AVERAGE UNEMPLOYMENT RATE
MARCH 1976 THROUGH FEBRUARY 1977

Appendix C

LPW Evaluation Studies Conducted By or For the Department of Commerce

Appendix C

LPW Evaluation Studies Conducted by or for the Commerce Department

Title	Conducted by	Release Date
1. On-Site Data Collection and Analysis in Support of a Microeconomic Evaluation of the Local Public Works Program (D)	Abt Associates, Inc. under contract to EDA Program Evaluation Division	January 1981
2. Employment Generation Report (A)	EDA Program Evaluation Division	December 1980
3. Analysis of Construction Employment (B) Generation by Project Types in the Local Public Works Program	EDA Program Evaluation Division	January 1981
4. Report on the Characteristics of (C) LPW Employees	EDA Program Evaluation Division	January 1981
5. The Timing of the Construction (E) Employment Impacts of the LPW Program Relative to Local Area Employment Cycles	EDA Program Evaluation Division	January 1981
6. The Net Cost of the Local Public (F) Works Program	EDA Program Evaluation Division	January 1981
7. Evaluation of the National Impacts of the Local Public Works Program (G)	Chase Econometrics Associates, Inc. under contract to DOC Office of Domestic Economic Policy Coordination	December 1980
8. Public Works Investment Study (110)	CONSAD Research Corporation under contract to DOC Office of Domestic Economic Policy Coordination	February 1980

Title	Conducted by	Release Date
9. Administrative Evaluation of the Local Public Works Program - Round I	DOC Office of Budget and Program Evaluation	December 1978
10. Report on Survey of the Processing of Amended Letters of Credit, Local Public Works Program, Economic Development Administration	DOC Office of Audits	October 1977
11. Report on Audit of Data System Used to Manage Local Public Works Grants Economic Development Administration	DOC Office of Audits	November 1977
12. Evaluation of the Round I Funding Formula of the Local Public Works Act	Center for Census Use Studies	November, 1977 Phase I Report July, 1978 Phase II Report

Appendix D

Other LPW Evaluation Studies

Appendix D

Other LPW Evaluation Studies

	Title	Conducted by	Release Date
1.	Observations Concerning the Local Public Works Program	General Accounting Office	February 1977
2.	Selection Process Used for First Round of Local Public Works Program - Adequate But Some Problems Experienced	General Accounting Office	April 1978
3.	Survey of the Start of Construction of Projects under the Local Public Works Program	General Accounting Office	June 1978
4.	Minority Firms on Public Works Projects - Mixed Results	General Accounting Office	January 1979
5.	Case Studies on the Impact of Federal Grants in Large Cities, 1977-78	Brookings under contract to DOL	Forthcoming
6.	State and Local Budgets the Day After it Rained: Why is the Surplus So High?	Edward M. Gramlich, Brookings	March 1978
7.	Stimulating Jobs With Public Works Investments: Long and Short Term Tradeoffs	Anthony J. Sulvetta, prepared for a conference on Economic Development and the Planner, American Planning Association	March 1979
8.	Public Works as Countercyclical Assistance	Anthony J. Sulvetta and Jules Lichtenstein, Office of Management and Budget	November 1979
9.	Title I of the Public Works Employment Act of 1976 -- The Paperwork Burden	National League of Cities under contract to Commission on Federal Paperwork	April 1977
10.	Economic Development Administration: Local Public Works Program: Impact on Culturally Related Construction	Louise Goldberg, National Endowment for the Arts	April 1978

Title	Conducted by	Release Date
11. City Need and the Responsiveness of Federal Grants Program	Congressional Budget Office	August 1978
12. Countercyclical Aid and Economic Stabilization	Advisory Commission on Intergovernmental Relations	December 1978

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